Correspondence: Inquiries about admission or for additional information should be addressed to:
UTHSCSA
Office of the Registrar
Mail Code 7702
7703 Floyd Curl Drive
San Antonio, Texas 78229-3900

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The University of Texas Health Science Center at San Antonio is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools (1866 Southern Lane, Decatur, Georgia 30033-4097: 404-679-4501) to award certificates and baccalaureate, master’s, doctoral, and professional degrees.

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The University of Texas Health Science Center at San Antonio Catalog 2003–2005

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Dr. Theresa Chiang, Associate Vice President for Academic Affairs and Executive Director of Student Services
Debra Goode, Interim Registrar
Alan A. Miller, Editor
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This Catalog contains program offerings of all five schools which constitute The University of Texas Health Science Center at San Antonio:

• Dental School,
• Graduate School of Biomedical Sciences,
• Medical School,
• School of Allied Health Sciences, and
• School of Nursing.

The General Information section contains material common to all schools. Programs and policies specific to the respective schools appear in the appropriate school’s section.

This Catalog can be viewed online at:
http://studentservices.uthscsa.edu/publications/Catalog.html
Edsalional Programs
The various educational offerings of the five schools of The University of Texas Health Science Center at San Antonio are summarized on these pages.

<table>
<thead>
<tr>
<th>School</th>
<th>Program</th>
<th>Length</th>
<th>Basic Entrance Requirements</th>
<th>Application Deadline</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nursing</strong></td>
<td>Bachelor of Science in Nursing(^2)</td>
<td>Varies</td>
<td>2.3 GPA in required prenursing courses. Program offered on 60 hours of prescribed college coursework. Overall 2.0 GPA; a full-time (4 sems.) or part-time basis. Competitive admissions.</td>
<td>Sept. 1, Feb. 1</td>
</tr>
<tr>
<td></td>
<td>Masters, PhD</td>
<td></td>
<td>See Graduate School of Biomedical Sciences.</td>
<td></td>
</tr>
<tr>
<td>CLINICAL LABORATORY SCIENCES(^1)</td>
<td>Bachelor of Science/Certificate</td>
<td>4 yrs./2 yrs.</td>
<td>Completion of freshman year requirements. Minimum grade of “C” in all science courses with a cumulative minimum GPA of 2.5. Competitive admissions.</td>
<td>May 1, Oct. 1</td>
</tr>
<tr>
<td></td>
<td>Bachelor of Science/Post-bacc. certificate in Cytogenetics</td>
<td>1 yr.</td>
<td>90 hours of preq. courses or BS in biological or physical science. Cumulative GPA of 2.5 with min. of “C” in prescribed coursework. Competitive admissions.</td>
<td>June 15</td>
</tr>
<tr>
<td></td>
<td>Master of Science</td>
<td></td>
<td>See Graduate School of Biomedical Sciences.</td>
<td></td>
</tr>
<tr>
<td>DEAF EDUCATION AND HEARING SCIENCE</td>
<td>Master of Deaf Education and Hearing Science</td>
<td>6 sem.</td>
<td>Bachelor’s degree; professional certificate or license, if required for practice; undergraduate GPA of 3.0 or higher; GRE or MAT required</td>
<td>Application period begins Sept. 1; remains open until class is filled.</td>
</tr>
<tr>
<td>DENTAL HYGIENE</td>
<td>Certificate</td>
<td>21 mos.</td>
<td>19 hours of prescribed college work with a minimum of “C” in each course. Minimum college GPA of 2.0. Competitive admissions. Must have passed TASP test(^2).</td>
<td>April 1</td>
</tr>
<tr>
<td></td>
<td>Bachelor of Science</td>
<td>4 yrs.</td>
<td>48 hours of prescribed college work with minimum of “C” in each course. Completion of an ADA-accredited Dental Hygiene Program.</td>
<td>April 1, Oct. 1</td>
</tr>
<tr>
<td></td>
<td>Master of Science</td>
<td></td>
<td>See Graduate School of Biomedical Sciences.</td>
<td></td>
</tr>
<tr>
<td>DENTAL LABORATORY TECHNOLOGY</td>
<td>Certificate</td>
<td>21 mos.</td>
<td>High school diploma or equivalent including prescribed coursework; SAT/ACT or ASSET scores; 6 hours of college-level prerequisites with 2.0 GPA. Must have passed TASP test(^2). Competitive admissions.</td>
<td>June 1</td>
</tr>
<tr>
<td></td>
<td>Bachelor of Science</td>
<td>4 yrs.</td>
<td>51 hours of prescribed college work with a minimum grade of “C” in each course. Minimum 2.0 GPA. Completion of an ADA-accredited Dental Laboratory Technology program, or CDT.</td>
<td>June 1</td>
</tr>
<tr>
<td>EMERGENCY MEDICAL TECHNOLOGY(^1)</td>
<td>Certificate (Basic and Paramedic)</td>
<td></td>
<td>18 years of age or older; high school diploma or GED. Competitive admissions. TASP not required as course total is less than 40 hours.</td>
<td>July 1, May 1</td>
</tr>
<tr>
<td></td>
<td>Bachelor of Science</td>
<td>4 yrs.</td>
<td>Paramedic certification; 72 hours of prescribed college work with a minimum grade of “C” in each course; minimum 2.0 GPA. Competitive admissions.</td>
<td>June 1, Nov. 1</td>
</tr>
<tr>
<td>OCCUPATIONAL THERAPY(^1)</td>
<td>Master of Occupational Therapy</td>
<td>3 yrs.</td>
<td>89 semester hours of prerequisite courses with prerequisite course GPA of at least 3.0. Competitive admissions.</td>
<td>Feb. 1</td>
</tr>
<tr>
<td>PHYSICAL THERAPY</td>
<td>Master of Physical Therapy</td>
<td>7 sem.</td>
<td>66–90 hours of prescribed college work; Math/Science GPA 3.0 or higher for competitive applicant; GRE required.</td>
<td>Applications accepted Sept. 1–July 1; admissions review begins in January</td>
</tr>
<tr>
<td>PHYSICIAN ASSISTANT STUDIES</td>
<td>Master of Physician Assistant Studies</td>
<td>36 mos.</td>
<td>90 hrs. of college prerequisites with GPA of 2.75 must be completed prior to application deadline. Minimum overall GPA of 2.75. Competitive admissions.</td>
<td>Oct. 1, Jan. 15: fall transcripts</td>
</tr>
<tr>
<td>RESPIRATORY CARE(^1)</td>
<td>Bachelor of Science</td>
<td>22 1/2 mos.</td>
<td>59 hours of prescribed college work with minimum overall GPA of 2.0 and completion of professional prerequisite courses with “C” or better. SAT/ACT scores encouraged. Competitive admissions.</td>
<td>May 15</td>
</tr>
</tbody>
</table>

\(^1\) A Master of Occupational Therapy and Bachelor of Science in Clinical Laboratory Sciences, Respiratory Care, and Emergency Medical Technology are also offered by UTHSCSA/Laredo.

\(^2\) Requirement does not apply to persons who accumulated 3 or more semester credit hours of nonremedial college work prior to the fall semester of 1989 nor to students who have a bachelor’s degree.
<table>
<thead>
<tr>
<th>Beginning Term</th>
<th>Specialization/Majors or Programs of Study</th>
<th>Type of Certificate/Diploma</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring</td>
<td>at least one-year work experience and Flexible track available for LVNs with RNs (2–3 semesters full-time).</td>
<td>BSN</td>
</tr>
<tr>
<td>Fall</td>
<td>Clinical Laboratory Sciences and Cytogenetics or categorical certification in chemistry, microbiology, hematology, and immunohematology. Joint program with UT San Antonio is available.</td>
<td>BS in Clinical Laboratory Sciences or post-baccalaureate certificate with tracks in CLS and Cytogenetics</td>
</tr>
<tr>
<td>Summer</td>
<td></td>
<td>MDEHS</td>
</tr>
<tr>
<td>Fall</td>
<td>Certificate in Dental Hygiene</td>
<td></td>
</tr>
<tr>
<td>Fall (Paramedic)</td>
<td>Certificate in Dental Laboratory Technology</td>
<td></td>
</tr>
<tr>
<td>Summer (EMT-Basic)</td>
<td>Certificate in Emergency Medical Technology</td>
<td></td>
</tr>
<tr>
<td>Fall</td>
<td>BS in Dental Laboratory Sciences</td>
<td></td>
</tr>
<tr>
<td>Fall</td>
<td>BS in Emergency Health Sciences</td>
<td></td>
</tr>
<tr>
<td>Summer</td>
<td>MOT</td>
<td></td>
</tr>
<tr>
<td>Fall</td>
<td>MPT</td>
<td></td>
</tr>
<tr>
<td>Summer</td>
<td>MS in Physician Assistant Studies</td>
<td></td>
</tr>
<tr>
<td>Fall</td>
<td>BS in Respiratory Care</td>
<td></td>
</tr>
<tr>
<td>School</td>
<td>Program</td>
<td>Length</td>
</tr>
<tr>
<td>-------</td>
<td>---------</td>
<td>--------</td>
</tr>
<tr>
<td>Dental</td>
<td>Doctor of Dental Surgery</td>
<td>4 yrs.</td>
</tr>
<tr>
<td>Advanced Education Certificate Programs(^1)</td>
<td>Varies</td>
<td>DDS or DMD degree. Acceptable academic records and references.</td>
</tr>
<tr>
<td>Advanced Education Integrated MD Program</td>
<td>6 yrs.</td>
<td>DDS or DMD degree. Acceptable academic records and references.</td>
</tr>
<tr>
<td>BASIC SCIENCES</td>
<td>Master of Science Doctor of Philosophy</td>
<td>Varies</td>
</tr>
<tr>
<td>DENTAL SCIENCES</td>
<td>Master of Science</td>
<td>Varies</td>
</tr>
<tr>
<td>MEDICAL SCIENCES</td>
<td>Doctor of Philosophy, Biomedical Engineering(^2)</td>
<td>Varies</td>
</tr>
<tr>
<td>Master of Science in Clinical Investigation</td>
<td>Varies</td>
<td>A graduate degree in the sciences or a professional degree in Allied Health, Medicine, Nursing, or Dentistry. A GRE of 1000 preferred.</td>
</tr>
<tr>
<td>Doctor of Philosophy or Master of Science, Radiological Sciences</td>
<td>Varies</td>
<td>Undergraduate GPA of 3.0 and GRE of 1000 preferred.</td>
</tr>
<tr>
<td>PHARMACY</td>
<td>Master of Science Doctor of Philosophy</td>
<td>24 mos.</td>
</tr>
<tr>
<td>NURSING</td>
<td>Master of Science in Nursing</td>
<td>Varies</td>
</tr>
<tr>
<td>Doctor of Philosophy in Nursing</td>
<td>Varies</td>
<td>BSN or MSN, current Texas licensure as RN, 3.0 GPA or higher preferred, GRE of 1000 (V&amp;Q) or MAT of 50 or higher preferred, current CPR certification, 4 satisfactory references, professional goal statement, personal interview, current health insurance, basic statistics course, basic computer skills, current immunizations, ability to obtain liability insurance.</td>
</tr>
<tr>
<td>DENTAL HYGIENE</td>
<td>Master of Science</td>
<td>Varies</td>
</tr>
<tr>
<td>CLINICAL LABORATORY SCIENCES</td>
<td>Master of Science</td>
<td>Varies</td>
</tr>
<tr>
<td>Medical</td>
<td>Doctor of Medicine</td>
<td>4 yrs.</td>
</tr>
</tbody>
</table>

\(^1\) See Graduate School section for MS degree in dental specialty.

\(^2\) See Graduate School section for Master of Science and Doctor of Philosophy in Nursing.

\(^3\) Pending approval of the Texas Higher Education Coordinating Board. A Master of Science in Biomedical Engineering also will be available.

*Sum of verbal and quantitative scores
<table>
<thead>
<tr>
<th>Beginning Term</th>
<th>Specialization/Majors or Programs of Study</th>
<th>Type of Certificate/Diploma</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td>DDS</td>
<td></td>
</tr>
<tr>
<td>Summer</td>
<td>Dental Diagnostic Science, Endodontics, Pediatric Dentistry, Periodontics, Prosthodontics</td>
<td>Certificate/Specialty Certificate</td>
</tr>
<tr>
<td>July 1</td>
<td>Adv. General Dentistry, General Practice Dentistry, Oral and Maxillofacial Surgery</td>
<td>Specialty Certificate and MD degree</td>
</tr>
<tr>
<td>Fall Spring</td>
<td>Biochemistry, Cellular and Structural Biology, Microbiology, Molecular Medicine Physiology, Pharmacology</td>
<td>MS and PhD</td>
</tr>
<tr>
<td>Summer</td>
<td>Dental Diagnostic Science, Periodontics, Prosthodontics, Endodontics</td>
<td>MS</td>
</tr>
<tr>
<td>Fall</td>
<td>Biomedical Engineering</td>
<td>MS and PhD</td>
</tr>
<tr>
<td>Fall</td>
<td>Clinical Investigation</td>
<td>MS</td>
</tr>
<tr>
<td>Fall</td>
<td>Radiological Sciences</td>
<td>MS and PhD</td>
</tr>
<tr>
<td>Summer</td>
<td>Joint program with UT Austin Pharm.D.</td>
<td></td>
</tr>
<tr>
<td>Fall Spring</td>
<td>Majors: Acute CNS, Admin., FNP, GNP, &amp; PNP For individuals with an Associate Degree or diploma in nursing, there is an option to earn a graduate degree (ADN/DIP-MSN)</td>
<td>MSN</td>
</tr>
<tr>
<td>Fall</td>
<td>Nursing (Clinical Nurse Scientist) Sites in Corpus Christi and Edinburg</td>
<td>PhD</td>
</tr>
<tr>
<td>Fall Spring</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fall Spring</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fall Spring</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fall</td>
<td>Toxicology, Immunohematology</td>
<td>MS</td>
</tr>
<tr>
<td>Fall</td>
<td></td>
<td>MD</td>
</tr>
</tbody>
</table>
Dental School & Advanced Dental Education Programs

**Summer 2003 (Postdoctoral/Resident students only)**
- Registration (continuing students) ... May 12
- Classes begin (continuing students) May 12
- Memorial Day holiday ... May 26
- Registration (new students) ... June 30
- Orientation (new students) ... June 30–July 1
- Classes begin (new students) ... July 2
- Independence Day holiday ... July 4
- Term concludes ... Aug. 8
- Graduation (Master’s students) no exercise ... Aug. 15

**Fall 2003**
- Registration
  - Freshmen (DS-I) ... July 21
  - Sophomores (DS-II), Juniors (DS-III), Seniors (DS-IV) ... July 28
  - Postdoctoral/Residents ... Aug. 11
- Orientation
  - Freshmen (DS-I) Information Technology orientation and general orientation ... Jul 21–Aug 1
- Classes Begin
  - Freshmen (DS-I) ... July 21
  - Sophomores (DS-II), Juniors (DS-III), Seniors (DS-IV) ... July 28
  - Postdoctoral/Residents ... Aug. 11
  - Labor Day holiday ... Sept. 1
  - Western Regional Exam ... Sept. 5–8
  - Faculty development day ... Oct. 15
  - Holler’s Memorial Lecture ... Nov. 21
  - Thanksgiving holidays ... Nov. 27–28
  - National Board Exam, Part II
  - Seniors (DS-IV) ... Dec. 1–2
- Term concludes
  - Graduation (Master’s students) no exercise ... Dec. 12
  - All students ... Dec. 19

**Spring 2004**
- Registration (Postdoctoral/Residents) Jan. 5
- Classes resume ... Jan. 5
- Martin Luther King, Jr. holiday ... Jan. 19
- Spring Break ... March 8–12
- Term/Academic Year concludes
  - DS-IV, classes end ... April 27
  - DS-IV checkout ... May 10–11
  - Postdoctoral/Resident (except Pediatrics & Endodontics) ... May 7
  - Certification of seniors (DS-IV) ... May 11
  - Western Regional Examining Board tba
  - Texas Dental Association meeting ... May 13–15
  - DS-I, DS-II, & DS-III, classes end ... May 20
  - DS-I, DS-II, & DS-III, checkout ... May 21
  - Grades Due (Predoctoral) ... May 26
  - Memorial Day ... May 31
  - Postdoctoral/Residents (Pediatrics & Endodontics) ... June 25
- Commencement
  - Master’s students ... May 21
  - Predoctoral Certificate students (no exercise) ... May 22
  - Postdoctoral/Residents (Pediatrics & Endodontics) no exercise ... June 28
  - Predoctoral ... May 22
- Other
  - Faculty Advance ... May 27–28
  - Remediation ... Jun 7–Jul 2

**Summer 2004 (Postdoctoral/Resident students only)**
- Registration (continuing students) ... May 10
- Classes begin (continuing students) May 10
- Memorial Day holiday ... May 31
- Registration (new students) ... June 29
- Orientation (new students) ... Jan 29–30
- Classes begin (new students) ... July 14
- Independence Day holiday ... July 5
- Term concludes ... Aug. 6
- Graduation (Master’s students) ... Aug. 13

Graduate School of Biomedical Sciences

**Summer 2003**
- Registration ... May 12
- Classes begin ... May 12
- Memorial Day holiday ... May 26
- Independence Day holiday ... July 4
- Term concludes ... Aug. 1
- Graduation (no exercise) ... Aug. 15

**Fall 2003**
- Registration ... Aug. 13
- Classes begin ... Aug. 18
- Labor Day holiday ... Sept. 1
- Thanksgiving holidays ... Nov. 27–28
- Term concludes ... Dec. 12
- Graduation (no exercise) ... Dec. 12

**Spring 2004**
- Registration ... Jan. 5
- Classes begin ... Jan. 6
- Martin Luther King, Jr. holiday ... Jan. 19
- Presidents’ Day holiday ... Feb. 16
- Spring Break – no classes for most basic sciences programs ... tba
- Term concludes ... May 7
- Commencement ... May 21

**Summer 2004 (tentative)**
- Registration ... May 17
- Classes begin ... May 17
- Independence Day holiday (tentative) ... July 5
- Term concludes ... Aug. 6
- Graduation (no exercise) ... Aug. 13

Note: Academic Calendars for 2004–2005 are scheduled to be available on the Web approximately November 1, 2004.
Academic Calendars 2003–2004

<table>
<thead>
<tr>
<th>Medical School</th>
<th>School of Allied Health Sciences</th>
</tr>
</thead>
</table>
| Dean’s Convocation and White Coat Ceremony .......... June 29 | Classes Begin  
All Allied Health students .......... May 17  
Memorial Day holiday .......... May 26  
Independence Day holiday (tentative) .......... July 4  
Term Concludes  
All Allied Health students .......... July 30  
Graduation (no exercise) .......... Aug. 13 |
| Registration | Registration & Orientation  
New Allied Health students  
Orientation .......... May 15  
All Allied Health students  
Registration - payment deadline for tuition and fees .......... May 16  
Classes Begin  
All Allied Health students .......... May 19  
Memorial Day holiday .......... May 26  
Independence Day holiday .......... July 4  
Term concludes  
All Allied Health students .......... Aug. 1  
Graduation (no exercise) .......... Aug. 15 |
| Juniors (MS-III) .................. June 11 | Summer 2003  
Registration & Orientation  
New Allied Health students  
Orientation .......... May 15  
All Allied Health students  
Registration - payment deadline for tuition and fees .......... May 16  
Classes Begin  
All Allied Health students .......... May 19  
Memorial Day holiday .......... May 26  
Independence Day holiday .......... July 4  
Term concludes  
All Allied Health students .......... Aug. 1  
Graduation (no exercise) .......... Aug. 15 |
| Seniors (MS-IV) .................. June 23-27 | Fall 2003  
Registration & Orientation  
Fall Web Registration .......... Apr 1-Jun 30  
MPAS-1 Orientation .......... July 31  
PA & MPT-3  
Registration-payment deadline for tuition and fees .......... Aug. 1  
New All Allied Health students except MPAS-1 Orientation .......... Aug. 21  
All Allied Health students except PA & MPT-3 Registration-payment deadline for tuition and fees .......... Aug. 22  
Classes Begin  
MPAS-1 & MPT-3 .......... Aug. 4  
All Allied Health students except PA and MPT-3 .......... Aug. 25  
Labor Day holiday .......... Sept. 1  
Thanksgiving holidays .......... Nov. 27-28  
Term Concludes .......... Dec. 12  
Graduation (no exercise) .......... Dec. 12 |
| Freshmen (MS-I) .................. June 30 | Spring 2004  
Registration & Orientation  
PA & MPT-3 Registration - payment deadline for tuition and fees .......... Jan. 5  
New All Allied Health students except Orientation .......... Jan. 8  
All Allied Health students except PA & MPT-3 Registration-payment deadline for tuition and fees .......... Jan. 9  
Classes Begin  
PA-4 & MPT-3 .......... Jan. 5  
All Allied Health students except PA & MPT-3 .......... Jan. 12, Martin Luther King, Jr. holiday .......... Jan. 19  
Spring Break (tentative UTSA date) .......... March 8-12  
Term Concludes  
All Allied Health students .......... May 7  
Commencement .......... May 12 |
| Sophomores (MS-II) .......... April 30 | Summer 2004 (tentative)  
Registration & Orientation  
New All Allied Health students Orientation .......... May 13  
All Allied Health students  
Registration-payment deadline for tuition and fees .......... May 14 |
| Seniors (MS-IV) .......... April 30 |  
Classes begin  
Juniors (MS-III) .......... May 21 |  
Spring Break - MS I & II .......... March 8-12  
Academic Year concludes (tentative)  
Sophomores (MS-II) .......... May 21  
Freshmen (MS-I) .......... May 19  
Juniors (MS-III) .......... May 21  
Commencement (tentative) .......... May 22  
Memorial day holiday .......... May 31  
Labor Day holiday .......... Sept. 1  
Thanksgiving holidays .......... Nov. 27-28  
Term Concludes .......... Dec. 12  
Graduation (no exercise) .......... Dec. 12 |
| Senior (MS-IV) .......... May 19  
Independence Day holiday .......... July 4  
Classes begin  
Juniors (MS-III) .......... June 11  
Seniors (MS-IV) .......... June 23-27  
Freshmen (MS-I) .......... June 30  
Sophomores (MS-II) .......... July 14  
Orientation  
Juniors (MS-III) .......... June 11-27  
Seniors (MS-IV) .......... June 23-27  
Freshmen (MS-I) .......... June 30  
Sophomores (MS-II) .......... July 14  
Labor Day holiday .......... Sept. 1  
Thanksgiving holidays .......... Nov. 27-28  
Christmas vacation begins  
MS-I, MS-II, MS-III, MS-IV .......... Dec. 13 |
| Classes resume (tentative)  
MS-I, MS-II, MS-III, MS-IV .......... Jan. 5  
Martin Luther King, Jr. holiday .......... Jan. 19  
Presidents’ Day Holiday .......... Feb. 16  
Spring Break - MS I & II .......... March 8-12  
Academic Year concludes (tentative)  
Sophomores (MS-II) .......... April 30  
Seniors (MS-IV) .......... April 30  
Freshmen (MS-I) .......... May 19  
Juniors (MS-III) .......... May 21  
Commencement (tentative) .......... May 22  
Memorial day holiday .......... May 31 |
| Registration-payment deadline for tuition and fees .......... Aug. 1  
New All Allied Health students except MPAS-1 Orientation .......... Aug. 21  
All Allied Health students except PA & MPT-3 Registration-payment deadline for tuition and fees .......... Aug. 22  
Classes Begin  
MPAS-1 & MPT-3 .......... Aug. 4  
All Allied Health students except PA and MPT-3 .......... Aug. 25  
Labor Day holiday .......... Sept. 1  
Thanksgiving holidays .......... Nov. 27-28  
Term Concludes .......... Dec. 12  
Graduation (no exercise) .......... Dec. 12 |
| Registration  
Fall Web Registration .......... Apr 1-Jun 30  
MPAS-1 Orientation .......... July 31  
PA & MPT-3  
Registration-payment deadline for tuition and fees .......... Aug. 1  
New All Allied Health students except MPAS-1 Orientation .......... Aug. 21  
All Allied Health students except PA & MPT-3 Registration-payment deadline for tuition and fees .......... Aug. 22  
Classes Begin  
MPAS-1 & MPT-3 .......... Aug. 4  
All Allied Health students except PA and MPT-3 .......... Aug. 25  
Labor Day holiday .......... Sept. 1  
Thanksgiving holidays .......... Nov. 27-28  
Term Concludes .......... Dec. 12  
Graduation (no exercise) .......... Dec. 12  
Spring 2004  
Faculty return .......... Aug. 18  
Orientation .......... Aug. 18-21  
Registration .......... Aug. 19  
Classes begin .......... Aug. 25  
Last day to add a class .......... Aug. 29  
Labor Day holiday .......... Sept. 1  
Thanksgiving holidays .......... Nov. 27-28  
Last official class day .......... Dec. 5  
Examinations .......... Dec. 8-10  
Graduation (no exercises) .......... Dec. 12  |
| Fall 2003  
Faculty return .......... Aug. 18  
Orientation .......... Aug. 18-21  
Registration .......... Aug. 19  
Classes begin .......... Aug. 25  
Last day to add a class .......... Aug. 29  
Labor Day holiday .......... Sept. 1  
Thanksgiving holidays .......... Nov. 27-28  
Last official class day .......... Dec. 5  
Examinations .......... Dec. 8-10  
Graduation (no exercises) .......... Dec. 12  |
| School of Nursing  
Summer 2003  
Memorial Day holiday .......... May 26  
Registration .......... May 27  
Classes begin .......... May 29  
Independence Day holiday .......... July 4  
Last official class day .......... Aug. 7  
Examinations .......... Aug. 8  
Graduation (no exercises) .......... Aug. 15  |
| Fall 2003  
Faculty return .......... Aug. 18  
Orientation .......... Aug. 18-21  
Registration .......... Aug. 19  
Classes begin .......... Aug. 25  
Last day to add a class .......... Aug. 29  
Labor Day holiday .......... Sept. 1  
Thanksgiving holidays .......... Nov. 27-28  
Last official class day .......... Dec. 5  
Examinations .......... Dec. 8-10  
Graduation (no exercises) .......... Dec. 12  |
| Summer 2004 (tentative)  
Registration .......... May 25  
Classes begin .......... May 31  
Independence Day holiday .......... July 5  
Last official class day .......... Aug. 5  
Examination .......... Aug. 6  
Graduation (no exercises) .......... Aug. 13  | DH= Dental Hygiene; DE=Deaf Education & Hearing Science; DLT=Dental Laboratory Technology; CLS=Clinical Laboratory Sciences; OT=Occupational Therapy; PA=Physician Assistant Studies; PT=Physical Therapy (MPT=Master of PT); RC=Respiratory Care

Note: Academic Calendars for 2004–2005 are scheduled to be available on the Web approximately November 1, 2004.
The University of Texas System Administration

Board of Regents
The University of Texas System

Officers
Charles Miller, Chairman
Rita C. Clements, Vice-Chairman
Woody L. Hunt, Vice-Chairman
A. W. “Dub” Riter, Jr., Vice-Chairman
Francie A. Frederick, Counsel and Secretary

Members
Term expires when successor is named
A. W. “Dub” Riter, Jr., Tyler

Terms expire February 1, 2005
Robert A. Estrada, Dallas
W. L. (Woody) Hunt, El Paso
Charles Miller, Houston

Terms expire February 1, 2007
Rita C. Clements, Dallas
Judith L. Craven, Houston
Cyndi Taylor Krier, San Antonio

Terms expire February 1, 2009
H. Scott Caven, Jr., Houston
James Richard Huffines, Austin

Administrative Officers
The University of Texas System

Mark G. Yudof
Chancellor

James C. Guckian
Acting Executive Vice Chancellor for Health Affairs

Kerry L. Kennedy
Executive Vice Chancellor for Business Affairs
UTHSCSA Department Chairs

**Allied Health Sciences**
Clinical Laboratory Sciences
Shirlyn B. McKenzie, PhD
Deaf Education and Hearing Science
Elizabeth M. Wilkes, PhD (Interim)
Dental Hygiene
Juanita S. Wallace, PhD
Dental Laboratory Technology
Roosevelt Davis, MSHP
Emergency Medical Technology
Donald J. Gordon, MD, PhD
Occupational Therapy
Gale S. Haradon, PhD
Physical Therapy
Giovanni De Domenico, PhD
Physician Assistant Studies
J. Dennis Blessing, PhD, PA-C
Respiratory Care
David C. Shelledy, PhD

**Basic Sciences**
Biochemistry
Larry D. Barnes, PhD (Interim)
Cellular & Structural Biology
Brian A. Herman, PhD
Microbiology and Immunology
Joel B. Baseman, PhD
Molecular Medicine
Wen-Hwa Lee, PhD
Pathology
Robert L. Reddick, MD
Pharmacology
Alan Frazer, PhD
Physiology
John Johnson, PhD (Interim)

**Dental Sciences**
Community Dentistry
John P. Brown, BDS, MS, PhD
Dental Diagnostic Science
Martin Thornhill, DDS, MD, PhD, MS
Endodontics
Kenneth M. Hargreaves, DDS, PhD
General Dentistry
Joseph M. Berrong, DDS
Oral & Maxillofacial Surgery
Stephen B. Milam, DDS, PhD
Orthodontics
John D. Rugh, PhD
Pediatric Dentistry
Huw F. Thomas, BDS, LDS, MS, PhD
Periodontics
David L. Cochran, DDS, PhD
Prosthodontics
Lily T. Garcia, DDS, MS
Restorative Dentistry
James B. Summit, DDS

**Medical Sciences**
Anesthesiology
Joseph J. Naples, MD
Family & Community Medicine
Carlos Roberto Jaén, MD
Medicine
Robert A. Clark, MD
Obstetrics & Gynecology
Robert S. Schenken, MD
Ophthalmology
Wichard A. J. van Heuven, MD
Orthopaedics
Ronald P. Williams, MD, PhD
Otolaryngology-Head & Neck Surgery
Randal A. Otto, MD
Pediatrics
Thomas C. Mayes, MD (Interim)
Psychiatry
Charles L. Bowden, MD
Radiation Oncology
Terence S. Herman, MD
Radiology
Gerald D. Dodd, III, MD
Rehabilitation Medicine
Nicolas E. Walsh, MD
Surgery
Glenn A. Halff, MD (Interim)

**Nursing**
Acute Nursing Care
Nancy J. Girard, PhD, RN
Chronic Nursing Care
Mary "Kelly" Dunn, PhD, RN
Family Nursing Care
Colleen S. Keller, PhD, RN
The Faculty listing herein is based on data received in the fall of 2002 from the chairs of the UTHSCSA departments and programs listed below. An alphabetical Index of Faculty follows, beginning on page 43.

### Graduate School Basic Sciences Departments

#### Biochemistry

**Professor and Interim Chair**
*Barnes, Larry D*  
PhD/UCLA

**Professor/Robert A Welch Distinguished Chair in Chemistry**
*Masters, Bettie Sue Siler*  
PhD/Duke

**Professor**
*Hansen, Jeffrey C*  
PhD/Wisconsin-Madison
*Horowitz, Paul M*  
PhD/Chicago
*Lafer, Eileen*  
PhD/Tufts
*Lee, John C*  
PhD/Purdue
*Leeb-Lundberg, Lars Morten F*  
PhD/California-Riverside
*Luduena, Richard F*  
PhD/UTHSC Dallas
*Nall, Barry T*  
PhD/Stanford
*Olsen, Merle S*  
PhD/Minnesota
*Robinson, Neal C*  
PhD/Washington
*Serwer, Philip*  
PhD/Harvard
*Souza, Rui J*  
PhD/Harvard
*Weintraub, Susan E*  
PhD/UTHSCSA

**Professor Emeritus**
*Nishiura, Jonathan S*  
PhD/California-Berkeley
*Miller, Sanford A*  
PhD/Rutgers

**Associate Professor**
*Adamo, Martin L*  
PhD/Houston
*Hardies, Stephen C*  
PhD/Wisconsin-Madison

**Visiting Associate Professor**
Pavel, Martasek  
MD, PhD/Charles Univ

**Assistant Professor**
*Demeler, Borries*  
PhD/UTHSCSA
*Hart, P John*  
PhD/UTHSCSA

**Instructor/Research**
Garrison, Preston N  
PhD/UTHSCSA
Griess, Gary A  
PhD/Massachusetts

**Other Graduate Faculty**
*MacDougall, Mary J*  
PhD/UTHSCSA School of Dentistry
*Rawls, H Ralph*  
PhD/UT Austin
*Shepherd, Albert P, Jr*  
PhD/Florida State-Tallahassee

**Professor**
*Bailey, Steven R*  
MD/Oregon HSC
*Fox, Peter T*  
MD/Georgetown
*Lancaster, Jack L*  
PhD/UTHSCSA School of Dentistry

**Associate Professor**
*Agrawal, C Mauli*  
PhD/Duke

**Visiting Associate Professor**
*Shepherd, Albert P, Jr*  
PhD/UT Austin
*Walsh, Nicolas E*  
MD/Colorado

**Assistant Professor**
*Adamo, Martin L*  
PhD/Houston
*Hardies, Stephen C*  
PhD/Wisconsin-Madison

**Assistant Professor/Research**
Banerjee, Asok  
PhD/Calcutta, India
Chaudhuri, Asish R  
PhD/Calcutta

**Instructor/Research**
Garrison, Preston N  
PhD/UTHSCSA
Griess, Gary A  
PhD/Massachusetts

**Assistant Professor**
*Naski, Michael/Pathology**
### Cellular and Structural Biology

**Professor and Chair**  
*Herman, Brian Alan  
PhD/Connecticut HSC  

**Professor and Deputy Chair**  
*Walter, Christi  
PhD/Florida State  

**Professor Emeritus**  
Rennels, Edward G  
PhD/Harvard  
Adrian, Erle K, Jr  
MD/Harvard  
PhD/UTMB Galveston  

**Professor**  
*Cameron, Ivan L  
PhD/UCLA  
*Herbert, Damon C  
PhD/California-San Francisco  
*Jagadeeswaran, Pudur  
PhD/Inst. of Science-India  
*Klebe, Robert J  
PhD/Yale  
*Kraig, Ellen B  
PhD/Brandeis  
*Leach, Robin  
PhD/Utah  
*Moore, Charleen M  
PhD/Tennessee  
*Morgan, William W  
PhD/Indiana  
*Munday, Gregory  
MD/Tasmania  
*Naylor, Susan L  
PhD/UTMB Galveston  
*Reiter, Russel J  
DMED/Lodz, Poland  
DMED/La Laguna, Spain  
PhD/Bowman Grey  
*Smith, Olivia Pereira  
PhD/Worcester Polytech  
*Williams, Vick  
MD, PhD/UTMB Galveston  

**Associate Professor**  
*Bowie, Elizabeth P  
PhD/UTHSCSA  
*Houston, Marshall L  
PhD/Kansas State  
*Johnson, Linda Y  
PhD/UTHSCSA  
*King, Tom  
PhD/S. Carolina  
*Larsen, Pamela  
PhD/Vanderbilt  
*Lechleiter, James  
PhD/Arizona  
*Sakaguchi, Alan Y  
PhD/USC  
*Sun, LuZhe  
PhD/Rutgers  
*Vaughan, Mary K  
PhD/UTMB Galveston  
*Weaker, Frank J  
PhD/LSU  
*Yang, Funmei  
PhD/Washington  

**Assistant Professor**  
*Bai, Yidong  
PhD/Columbia  
*Dong, Lily  
PhD/Iowa State  
*Vogel, Kristine  
PhD/Oregon  

**Senior Lecturer**  
*Philo, Ron  
PhD/UTHSCSA  
*Richards, Fred  
PhD/UT Austin  

**Clinical Associate Professor**  
*Cohen, David  
MD/Washington  

**Assistant Professor**  
*Agarwal, Animesh  
MD/UTHSCSA  

**Associate Professor**  
*Chatterjee, Bandana  
PhD/Nebraska  
*Fox, Peter T  
MD/Georgetown  
*Hornsby, Peter J  
PhD/London  
*Lancaster, Jack L  
PhD/UT Southwestern Med Ctr  
*MacDougall, Mary J  
PhD/USC School of Dentistry  
*Mccarrey, John R  
PhD/California  
*Richardson, Arlan G  
PhD/Oklahoma State  
*Roy, Arun K  
PhD/Wayne State  
*Smith, James  
PhD/Yale  
*Thomas, Huw F  
PhD/Connecticut-Storrs  
*Vijg, Jan  
PhD/Leiden  

*Ong, Joo L  
PhD/Alabama-Birmingham  
*Sprague, Eugene A  
PhD/UTHSCSA  

**Clinical Associate Professor**  
*Shin, Daehwan  
PhD/UT Austin  

**Associate Professor**  
*Cohen, David  
MD/Washington  

**Assistant Professor**  
*Agarwal, Animesh  
MD/UTHSCSA  

**Associate Professor**  
*Bowie, Elizabeth P  
PhD/UTHSCSA  
*Houston, Marshall L  
PhD/Kansas State  
*Johnson, Linda Y  
PhD/UTHSCSA  
*King, Tom  
PhD/S. Carolina  
*Larsen, Pamela  
PhD/Vanderbilt  
*Lechleiter, James  
PhD/Arizona  
*Sakaguchi, Alan Y  
PhD/USC  
*Sun, LuZhe  
PhD/Rutgers  
*Vaughan, Mary K  
PhD/UTMB Galveston  
*Weaker, Frank J  
PhD/LSU  
*Yang, Funmei  
PhD/Washington  

**Associate Professor**  
*Bowie, Elizabeth P  
PhD/UTHSCSA  
*Houston, Marshall L  
PhD/Kansas State  
*Johnson, Linda Y  
PhD/UTHSCSA  
*King, Tom  
PhD/S. Carolina  
*Larsen, Pamela  
PhD/Vanderbilt  
*Lechleiter, James  
PhD/Arizona  
*Sakaguchi, Alan Y  
PhD/USC  
*Sun, LuZhe  
PhD/Rutgers  
*Vaughan, Mary K  
PhD/UTMB Galveston  
*Weaker, Frank J  
PhD/LSU  
*Yang, Funmei  
PhD/Washington  

*Graduate Faculty
Microbiology & Immunology

**Professor and Chair**
*Baseman, Joel B*
PhD/Massachusetts

**Professor**
*Alderete, John F*
PhD/Kansas
*Gauntt, Charles J*
PhD/UT Austin
*Haldenwang, William G*
PhD/UT Austin
*Kolodrubetz, David J*
PhD/Brandeis
*Krolick, Keith A*
PhD/UCLA
*Mattingly, Stephen J*
PhD/Georgia
*Teale, Judy M*
PhD/Virginia

**Professor/Research**
*Cox, Rebecca A*
PhD/Med. College of Georgia

**Associate Professor**
*Berton, Michael T*
PhD/Tennessee
*Gunn, John S*
PhD/Maryland
*Klose, Karl E*
PhD/California-Berkeley
*Thomas, Virginia L*
PhD/UTHSCSA
*Winters, Wendell D*
PhD/Illinois Medical School
*Zhong, Guangming*
PhD/Hunan Medical Univ

**Assistant Professor**
*Dhandayuthapani, Subramanian*
PhD/Univ of Madras
*Izumi, Kenneth*
PhD/UCLA
*Wickes, Brian L*
PhD/Catholic Univ
*Xiang, Yan*
PhD/Case Western Reserve

**Assistant Professor/Research**
Dallo, Shatha F
PhD/SUNY Brooklyn
Lehker, Michael W
PhD/UTHSCSA
Magee, D Mitchell
PhD/Texas A&M
Pina, Sophia
PhD/UTHSCSA

**Instructor/Research**
Awasthi, Shanjana
PhD/Sanjay Gandhi P.G. Institute of Medical Sciences
Quitugua, Teresa
PhD/UTHSCSA

**Associate Professor**
*Chatterjee, Bandana*
PhD/Nebraska
*Roy, Arun K*
PhD/Wayne State
*Tomkinson, Alan*
PhD/Newcastle, England

**Assistant Professor**
*Ferry, Robert*
MD/UTHSCSA
*Marciniak, Robert*
MD/Harvard Med
PhD/MIT

**Other Graduate Faculty**
*Ahuja, Sunil*
MD/Armed Forces Medical College
*Gao, Shou-Jiang*
PhD/Bordeaux, France
*Giavedoni, Luis*
PhD/Nat. Univ of Buenos Aires
*Guentzel, M Neal*
PhD/UT Austin
*Infante, Anthony J*
MD, PhD/Indiana
*Jorgensen, James H*
PhD/UTMB
*Kimata, Jason*
PhD/Washington
*Kraig, Ellen B*
PhD/Brandeis
*Melby, Peter C*
MD/Colorado
*Zhang, Shuyu*
PhD/UT Austin

**Associate Professor**
*Chen, Phang-Lang*
PhD/California-San Diego
*Christy, Barbara A*
PhD/Johns Hopkins
*Hasty, E Paul*
DVM/Texas A&M
*Sharp, Zelton D*
PhD/Arkansas

Molecular Medicine

**Professor and Chair**
*Lee, Wen-Hwa*
PhD/California-Berkeley

**Professor and Deputy Chair**
*Sung, Patrick M*
PhD/Oxford

**Professor**
*Chatterjee, Bandana*
PhD/Nebraska
*Roy, Arun K*
PhD/Wayne State
*Tomkinson, Alan*
PhD/Newcastle, England

**Associate Professor**
*Chen, Phang-Lang*
PhD/California-San Diego
*Christy, Barbara A*
PhD/Johns Hopkins
*Hasty, E Paul*
DVM/Texas A&M
*Sharp, Zelton D*
PhD/Arkansas

*Graduate Faculty*
**Assistant Professor**  
*Beesho, Tadayoshi*  
PhD/Ookayama, Japan  
*Boyer, Thomas*  
PhD/SUNY-Buffalo  
*Gacynska, Maria E*  
PhD/Lodz, Poland  
*Lee, Sang Eun*  
PhD/Brown  
*Rao, Hai*  
PhD/SUNY-Stony Brook  
*Yew, Patricia Renee*  
PhD/UCLA  
PhD/Oklahoma

**Other Graduate Faculty**  
*Abboud, Hanna E*  
MD/Alexandria, Egypt  
*Boldt, David H*  
MD/Tufts  
*Clark, Robert A*  
MD/Columbia  
*Haile, David J*  
MD/Johns Hopkins  
*Harr, P John*  
PhD/UT Austin  
PhD/Kansas  
*Hinck, Andrew P*  
PhD/Wisconsin-Madison  
*Klebe, Robert J*  
PhD/Yale  
*Kreisberg, Jeffrey I*  
PhD/Maryland  
*Moyer, Mary Pat*  
PhD/UT Austin  
*Mundy, Gregory*  
MD/Tasmania  
*Richardson, Arlan G*  
PhD/Oklahoma State  
*Venkatachalam, Manjeri A*  
MBBS/Calcutta, India

**Pathology**

**Chair and Townsend Professor**  
Reddick, Robert Lee  
MD, MS/N. Carolina-Chapel Hill  

**Professor**  
*Clare, C Nan*  
MD/UTHSCSA  
*Coalson, Jacqueline J*  
PhD/Oklahoma  
*DiMaio, Vincent J M*  
MD/SUNY Downstate  
*Ghidoni, John J*  
MD/SUNY HSC Brooklyn  
*Grimwood, Ronald E, Jr*  
MD/Ohio State  
*Harrison, Chantal*  
MD/Florida  
*Jorgensen, James H*  
PhD/UTMB Galveston  
*McKenzie, Shirlyn B*  
PhD/Texas A&M  
*McManus, Clyde A*  
PhD/Rice  
*Montiel, Milka M*  
PhD/Colorado  
*Mott, Glen E*  
PhD/Texas A&M  
*Olson, John D*  
MD/Georgetown  
PhD/Minnesotta

**Professor/Clinical**  
Wigodsky, Herman S  
MD, PhD/Northwestern

**Clinical Professor**  
Yoder, Bradley  
MD/Pittsburgh  

**Professor Emeritus**  
McGill, Henry C, Jr  
MD/Vanderbilt  
Townsend, Frank M  
MD/Tulane

**Associate Professor**  
Alderson, Gerald L  
DDS, MD/Loma Linda  
Craig, Fiona E  
MB, BS/Bartholomew Hospital, UK

**Associate Professor/Research**  
*Prihoda, Thomas J*  
PhD/Texas A&M  
Saikumar, Pothana  
PhD/Inst. of Science-India

**Assistant Professor**  
Burns, Cheryl A  
MS/Minnesota
Pharmacology

Professor and Chair
*Frazer, Alan
PhD/Pennsylvania

Professor
*Bussey, Henry I
PharmD/UTHSCSA
*Ereshefsky, Larry
PharmD/USC
*France, Charles
PhD/Michigan
*Hargreaves, Kenneth M
DDS/Georgetown
PhD/Uniformed Services Univ of Health Sciences
*Henderson, George I
PhD/Vanderbilt
*Jones, David J
PhD/UTHSCSA
*Kuhn, John G
PharmD/UTHSCSA
*Mifflin, Steven W
PhD/UTHSCSA
*Roberts, James
PhD/Oregon-Eugene
*Shepherd, Alexander M M
MD/St. Andrews-Scotland
PhD/Dundee-Scotland
*Ticku, Maharaj
PhD/SUNY-Buffalo

Assistant Professor/Research
Abboud, Sherry
MD/Maryland
Dong, Zheng
PhD/Shanghai
Ghosh-Choudhury, Nandini
PhD/McMaster, Canada
Pekkel, Vladimir
PhD/USSR

Instructor
Patel, Yogendra J
MS/Baroda, India

Assistant Professor
*Clarke, William P
PhD/Wayne State
*Freeman, James W
PhD/Kentucky
*Hensler, Julie G
PhD/Northwestern
*Keeton, Thomas K
PhD/UT Southwestern Medical School
*Knodel, Leroy C
PharmD/Kentucky
Lam, Yui-Wing Francis
PharmD/Minnesota
*Lamb, Richard
PhD/Arkansas
*Liu, Feng
PhD/Iowa State
*Morilak, David A
PhD/Princeton
*Sprague, Eugene A
PhD/UTHSCSA
*Strong, John R
PhD/UTHSC Houston
*Sun, LuZhe
PhD/Rutgers

Assistant Professor
*Cavazos, Jose E
MD/Instituto Tecnologico y Estudios Superiores de Monterrey
PhD/Wisconsin-Madison

*Daws, Lynette C
PhD/Flinders-S. Australia
*Dong, Lily
PhD/Iowa State
*Sanchez, Russell
PhD/NYU

Adjunct Associate Professor
*Hinojosa-Laborde, Carmen
PhD/UTHSCSA

Assistant Professor/Research
Berg, Kelly A
MS/Central Michigan-Mt. Pleasant
Cheng, Benxu
PhD/Auburn
McMahon, Lance
PhD/Texas A&M
Mehta, Ashok K
PhD/Panjab, India
Scalzitti, Joanne
PhD/West Virginia

Instructor/Research
Bennamoun, Saloua
PhD/Rowen, France
Kalluri, Haviyaji
PhD/Hyderabad-India
Cao, Bo-Jin
PhD/UTHSCSA

*Sutton, Deanna A
BS/Oregon HSC

Instructor/Research
Mohan, Sumathy
PhD/Madras, India
Reinhold, Martina
PhD/Washington-St. Louis

Instructor/Clinical
Amin, Kay
DDS/Columbia
Bryan, Eugenia
MD/Mississippi

*Graduate Faculty
Physiology

Professor and Interim Chair
*Johnson, John M
  PhD/UT Southwestern

Professor Emeritus
Bishop, Vernon S
  PhD/Mississippi
Kalu, Dike N
  PhD/London
Masoro, Edward J
  PhD/California-Berkeley
Mikiten, Terry M
  PhD/Albert Einstein College of Medicine, NY
Yu, Byung P
  PhD/Illinois

Professor
*Hornsby, Peter J
  PhD/London
*McCarter, Roger J M
  PhD/Medical College of Virginia
*Nelson, James F
  PhD/USC
*Richardson, Arlan G
  PhD/Oklahoma State
*Shepherd, Albert P, Jr
  PhD/Mississippi
*Vijg, Jan
  PhD/Leiden

Associate Professor
*Camacho, Patricia
  PhD/Bryn Mawr
*Green, Gary M
  PhD/California-Berkeley
*Herlihy, Jeremiah T
  PhD/Virginia
*Proppe, Duane W
  PhD/Washington
*Ward, Walter F
  PhD/Marquette

Assistant Professor
*Brenner, Robert
  PhD/UT Austin
*Firulli, Anthony B
  PhD/SUNY Buffalo
*Rothberg, Brad S
  PhD/Florida College of Medicine
*Shapiro, Mark S
  PhD/Rush U. Medical Center
*Steinhelper, Mark E
  PhD/UTHSCSA
*Stockand, James D
  PhD/UTHSC Houston
*Toney, Glenn M
  PhD/Louisville

Assistant Professor/Research
Banu, M Jameela
  PhD/Madras
Ikeno, Yuji
  MD, PhD/Nagasaki
Pahlavani, Mohammad A
  PhD/Illinois State, Normal
Ran, Qitao
  PhD/Peking Union Med
VanRemmen, Holly
  PhD/UTHSCSA

Other Graduate Faculty
*Christy, Barbara A
  PhD/Johns Hopkins
*Daws, Lynette C
  PhD/Flinders
*Dumitru, Daniel
  MD/Cincinnati
*Feldman, Marc D
  MD/Pennsylvania School of Medicine
*Fernandes, Gabriel
  PhD/Bombay
*Fox, Peter T
  MD/Georgetown
*Freeman, Gregory L
  MD/Loyola
*Glickman, Randolph D
  PhD/Toronto
*Katz, Michael S
  MD/Johns Hopkins
*Kellogg, Dean L, Jr
  MD, PhD/UTHSCSA
*Kiel, Jeffrey W
  PhD/UTHSCSA
*Mandarino, Lawrence J
  PhD/Arizona State
*Shain, Sydney A
  PhD/California-Berkeley

*Graduate Faculty
Radiological Sciences

**Professor**
*Bowden, Charles L*  
PhD/Baylor College of Medicine  
*Brewer, James*  
PhD/Wisconsin  
*Dodd, Gerald D, III*  
MD/UT Houston  
*Fox, Peter T*  
MD/Georgetown  
*Fullerton, Gary D*  
PhD/Wisconsin  
*Herman, Terence S*  
MD/Connecticut  
*Hevezi, James M*  
PhD/Notre Dame  
*McDavid, William D*  
PhD/UTHSCSA  
*Meltz, Martin L*  
PhD/Rochester  
*Phillips, William T*  
MD/UTMB Galveston  
*Vijayalaxmi, Dr*  
PhD/S.V. University, India  
*Waggener, Robert G*  
PhD/UTHSC Houston  

**Assistant Professor**
*Awasthi, Vibhudutta*  
PhD/Sanjay Gandhi, India  
*Brewer, Patricia A*  
PhD/Uniformed Services Univ of the Health Sciences  
*Dodd, Stephen*  
PhD/Queensland, Australia  
*Fuss, Martin*  
PhD/Heidelberg, Germany  
*Gao, Jia-Hong*  
PhD/Yale  
*Hardies, Lou Jean*  
PhD/UTHSCSA  
*Jerabek, Paul*  
PhD/California-Irvine  
*Narayana, Shalini*  
PhD/Iowa  
*Salter, Bill J*  
PhD/UTHSCSA  
*Xiong, Jinhua*  
PhD/UTHSCSA  

**Associate Professor**
*Clarke, Geoffrey*  
PhD/UTHSC Dallas  
*Dealh, S Thomas*  
DMD/S. Illinois  
PhD/Iowa  
*Glickman, Randolph D*  
PhD/Toronto  
*Goins, Beth A*  
PhD/Tennessee  
*Lancaster, Jack L*  
PhD/UT Southwestern Med Ctr  
*Natarajan, Mohan*  
PhD/India  
*Sprague, Eugene A*  
PhD/UTHSCSA  

**Other Graduate Faculty**
*Belden, Clifford*  
MD/John Hopkins  
*Bice, William*  
PhD/Florida  
*Bough, Melissa*  
PhD/UTHSCSA  
*Cawthon, Michael*  
DO/Texas College of Osteopathic Medicine  

---

*Graduate Faculty*
Dental School

Community Dentistry

Professor and Chair
Brown, John P
BDSc, PhD/Queensland
MS/Rochester

Associate Professor
Mobley, Connie Marie
LD, PhD/Texas A&M
Neenan, M Elaine
DDS/Virginia
MPH/UTSPH Houston
MS/Columbia

Associate Professor/Research
Johnson-Alvares, Dorthea A
MS/Washington

Assistant Professor
Baez, Martha X
RDH, MPH/UTSPH Houston
Cappelli, David P
DMD/Pittsburgh
MPH/UTSPH Houston
Porteous, Nuala B
BDS/Cork
MPH/UTSPH Houston

Clinical Assistant Professor
Balderas, Vidal G
DDS/UTHSCSA

Assistant Professor/Research
Steffensen, Jane E
CHES, MPH/Michigan

Dental Diagnostic Science

Professor and Chair
*Thornhill, Martin
MD/Kings College Hospital Medical School
DDS/Kings College Hospital
Dental School
MS/London Hospital Medical College
PhD/Univ of London

*Associate Professor
Thornhill, Martin
MD/Kings College Hospital Medical School
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MS/London Hospital Medical College
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Professor
*Alder, Marden E
DDS/Loma Linda
MS/UTHSCSA
Collins, Edwin M
DDS/Nebraska
MSc/USC
Dove, Stephen B
DDS, MS/UTHSCSA
Langlais, Robert P
DDS/McGill
MS/Indiana
McDavid, William D
PhD/UTHSCSA

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PhD/Iowa

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MSC/Loyola

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Clinical Assistant Professor
Lin, Alan L
PhD/William & Mary

Endodontics

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DDS/Georgetown
PhD/Uniformed Services

Professor Emeritus
del Rio, Carlos E
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EndoCert/Penn

Clinical Professor
Alexander, Joel B
DDS, EndoCert, MA/UTDB Houston
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DDS/Pennsylvania EndoCert/VA Hospital-Long Beach
Martin, Edwin J
DDS, EndoCert/Baylor

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Walters, Glenn R
DDS, EndoCert/UTDB Houston

Clinical Associate Professor
Schindler, William G
DDS, MS/UTDB Houston
EndoCert/Wilford Hall

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General Dentistry

Professor and Chair
Berrong, Joseph M
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Professor
Baez, Ramon J
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MPH/UTHSC Houston
Dodge, William W
DDS/USC
Redding, Spencer
DDS/South Carolina

Clinical Professor
Robbins, James W
DDS/Tennessee

Associate Professor and
Deputy Chairman
Dale, Robert A
DDS/UTDB Houston

Associate Professor
Conn, Linc J, Jr
DDS/UTHSCSA
Gildersleeve, John R
DDS/Tennessee
Haveman, Carl
DDS, MS/UTDB Houston
Hermesch, Charles B
DMD/Washington-St. Louis
Hicks, Jeffery L
DDS/UTHSCSA
Knight, George T
DDS/UTHSCSA

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DDS/Iowa
MS/UTHSCSA
Bradley, Laurie L
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MS/UTHSC Houston
Esquivel-Upshaw, Josephine
DMD/Philippines
MS/Northwestern
Harrison, Jody S
DDS/SUNY
Haynes, Hazel
DMD/Georgia
MPH/UTHSC Houston
Partida, M Norma
DDS/UTHSCSA

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DDS/Baylor
Luce, Ernest B
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Lyman, Rise’ L
DDS/UTHSCSA
Snyder, David E
DDS/Washington

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MS/Oklahoma

Oral and Maxillofacial Surgery

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MBA/Washington–St. Louis

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MS/Tennessee

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MS/N. Carolina  
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MD/UTHSCSA

**Orthodontics**

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Hatch, John P  
PhD/UT Arlington

**Clinical Professor**  
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**Clinical Associate Professor**  
Creekmore, Thomas D  
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Crevoisier, Ralph  
DDS, MS/St. Louis  
Harris, Loyd L  
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Hurst, C Lynn  
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MS/Oklahoma HSC

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Vaughan, O B  
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Crevoisier, Ralph  
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Harris, Loyd L  
DDS/Baylor  
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**Pediatric Dentistry**

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Lin, Brent Pen-Jen  
DMD/Pennsylvania  
Roldan, Rosie  
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DMD/philadelphia

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PhD/UTHSCSA

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Cardenas, Lina M  
DDS/Columbia  
MS/North Carolina  
PhD/Japan  
Castellano, Joseph B  
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Marcushamer, Mauricio  
DDS/Mexico
Periodontics

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College of Virginia  
MMSC/Harvard

**Professor**
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MS/Nebraska  
Mellonig, James T  
DDS/Marquette  
MS/George Washington  
Cerr. Per./Navy Dental School  
Willmann, Donald E  
DDS/UTDB Houston  
MS/Marquette

**Clinical Professor**
Meffert, Roland M  
DDS/Marquette  
MS/UTDB Houston  
Schwartz, Zvi  
DMD, PhD/Hebrew Univ-  
Hadassah Faculty of Dental  
Medicine

**Associate Professor**
*Alvares, Olav F  
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Arnold, Ralph M  
DMD/California-San  
Francisco  
Brunsvold, Michael A  
DMD/Ohio State  
Jones, Archie A  
DMD/MISSouri-Kansas City  
MBA/UT San Antonio  
Oates, Thomas W, Jr  
DMD/Pennsylvania  
PhD/Medical College of  
Virginia  
Steifensen, Bjorn  
DMD/Copenhagen, Denmark  
MS/Michigan  
PhD/British Columbia  
Thomas, D Denee  
PhD/Creighton

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Croft, Lloyd K  
DDS/UTDB Houston  
Mills, Michael P  
DDS/Alabama-Birmingham  
MS/UTDB Houston

**Assistant Professor**
Bolond, Edward J  
PhD/Notre Dame  
Carnes, David L, Jr  
PhD, MS/Rice  
Lasho, David J  
DDS/Minnesota  
MS/Indiana

**Clinical Assistant Professor**
Masters, Lisa B  
DDS, MS/UTHSCSA  
Newbold, Dewey A  
DDS, MSD/Baylor

Prosthodontics

**Professor and Chair**
Garcia, Lily T  
DDS/Baylor  
MS/UTHSCSA

**Professor**
*Cronin, Robert J, Jr  
DDS/Georgetown  
MS/UTHSC Houston  
Jones, John D  
DDS/Missouri  
*Kaiser, David A  
DDS/Illinois  
MSD/Washington

**Professor Emeritus**
Feldmann, Earl E  
DDS/Illinois  
Kuebker, William A  
DDS/Northwestern  
MS/Washington  
Morrow, Robert M  
DDS/Missouri

**Associate Professor**
*Cagna, David R  
DMD/S. Carolina-Charleston  
*Cavazos, Edmund, Jr  
DDS/Marquette  
*Phoenix, Rodney D  
DMD/Ohio State  
MS/UTHSCSA  
*Seals, Richard R, Jr  
DMD/Oklahoma  
MS/UTHSCSA

**Clinical Associate Professor**
Meffert, Roland M  
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Schwartz, Zvi  
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Medicine

**Assistant Professor**
Gardner, Wayne A  
DMD/Virginia Commonwealth  
MS/UTHSCSA  
Geertsema, James J  
DMD/Iowa  
*Hartman, Garrett E  
DMD/Minnesota  
MS/UTHSC Houston  
*Mansueto, Michael A  
DMD/Pittsburgh  
MS/UTHSC Houston

**Clinical Associate Professor**
Croft, Lloyd K  
DDS/UTDB Houston  
Mills, Michael P  
DDS/Alabama-Birmingham  
MS/UTDB Houston

**Clinical Associate Professor**
(B) Part Time
Aranda, Rafael  
DDS/Mexico  
DDS/UTHSCSA  
Butler, Gerald V  
DDS/Missouri-Kansas City  
Calverly, Mickey J  
DDS/UTHSCSA

**Clinical Assistant Professor**
Masters, Lisa B  
DDS, MS/UTHSCSA  
Newbold, Dewey A  
DDS, MSD/Baylor

*Graduate Faculty
<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>University/State</th>
</tr>
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<tbody>
<tr>
<td>Kotwal, Keki R</td>
<td>DMD, MS/Alabama</td>
<td></td>
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<tr>
<td>Mahon, Joseph M</td>
<td>BDentSci/Dublin MS/UTHSCSA</td>
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</tr>
<tr>
<td>Parma, Rita</td>
<td>DDS/UTHSCSA</td>
<td></td>
</tr>
<tr>
<td>Raimondo, Richard L, Jr</td>
<td>DDS/UTDB Houston</td>
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</tr>
<tr>
<td>Richard, Glenn E</td>
<td>DDS/Tennessee</td>
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<tr>
<td>Troendle, George R</td>
<td>DDS/LSU MS/UTHSCSA</td>
<td></td>
</tr>
<tr>
<td>Vickers, Victoria Ann</td>
<td>DDS/UTHSCSA</td>
<td></td>
</tr>
<tr>
<td>Yard, Robert A</td>
<td>DDS/Missouri-Kansas City</td>
<td></td>
</tr>
</tbody>
</table>

**Restorative Dentistry**

**Professor and Chair**

Summitt, James B  DDS/Tennessee  MS/UTHSC Houston

**Professor**

Barghi, Nasser  DDS/Tehran  MA/UT San Antonio  dos Santos, Jose, Jr  DDS, PhD/Brazil  MS/Michigan

Nowlin, Thomas P  DDS/UTHSC Houston  MA/UT San Antonio  Rawls, H Ralph  PhD/Florida State

**Clinical Professor**

Trowbridge, Ronald C  DDS/Baylor

**Associate Professor**

Marshall, Thomas D  DDS, MSEd/Indiana

Nelson, Stanley J  DDS, MS/Michigan

Norling, Barry K  PhD/Northwestern

Ong, Joo L  PhD/Alabama-Birmingham

Titus, Harry W  DDS/Case Western Reserve  MA/UT San Antonio

Troendle, Karen B  DDS/UTHSCSA  MPH/UTHSC Houston

**Clinical Associate Professor**

Boeselt, Bernard J  DDS/UTHSCSA

Buiakema, Donald J  DDS/Michigan

Dahlberg, Gregory W  DDS/UTHSCSA

Fryling, Stephen E  DDS/Maryland

Holleran, Barry W  DDS/UTHSCSA  MS/UT San Antonio

McAlister, Elizabeth H  DDS/UTHSCSA  Nield, Donald G  DMD/Manitoba

Payne, Steven R  DDS/UTHSCSA  Watkins, Thomas R  DDS/UTHSCSA

Wright, Edward F  DDS/Case Western Reserve

**Assistant Professor**

Nicholson, Jerry  DDS/UTHSC Houston  MA/UTHSCSA

Overton, Johnie D  DDS/UTHSCSA  Whang, Kyumin  PhD/Northwestern

**Assistant Professor/Research**

Neera, Satsangi  PhD/U. of Lucknow

**Clinical Assistant Professor**

George, Richard P  DDS/UTHSCSA

Giesey, Samuel C, Jr  DDS/UTDB Houston

Kane, Sheryl  DDS/Tennessee

Kelley, Kimberley  DDS/UTHSCSA

Kellogg, Karen  DDS/UTHSCSA

Littlestar, Mark  DDS/UTHSCSA

Morris, Lawrence Wayne  DDS/UTHSCSA

Nguyen, Steve  DDS/UTHSCSA

Park, Jacob G  DDS/UTHSCSA
Anesthesiology

**Professor and Chair**
Naples, Joseph J
MD/St. Louis

**Professor**
Bracken, Christopher A
MD/UTHSCSA
PhD/Texas A&M

Bready, Lois L
MD/UTHSCSA

Gurkowski, Mary Ann
MD/UTHSCSA

Hickey, Rosemary
MD/Arkansas

Jones, David J
PhD/UTHSCSA

Orr, Malcolm D
MD/Queensland
PhD/Australian National U

Ramamurthy, Somayaji
MD/Kasturba, India

Rogers, James N
MD/Arizona

Sloan, Tod B
MD, PhD/Northwestern

Welch, Gary
MD, PhD/School of
Medicine-Charlotsville
JD/Lasalle

Wheeler, A Scott
MD/Oregon Medical School

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Knape, Kelly G
MD/UTHSCSA

Schuhmacher, Lawrence
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Anderson, Douglas M
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Bunegin, Leonid
BS/Pittsburgh

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MD/UTHSCSA

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JD/SMU

Rasch, Deborah K
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Wells, Lynda T
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Zuazu, Marcos
MD/Zaragoza, Spain

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Noorily, Susan H
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Biter, D Martin
MD/New Mexico-Albuquerque

Campbell, Carol
MD/LSU

Dumitrascu, George
MD/McGill-Montreal

Ewing, Dawn
MD/Iowa

Gutierrez, Olivia A
MD/Texas Tech

Paukert, Judy
MD/UT Austin

Shah, Jaydeep
MD/Medical College of Virginia

Tyler, Debra S
MD/Texas Tech

Wheeler, Mary E
MD/Baylor

**Clinical Assistant Professor**
Baust, Joanne
MD/Georgetown

Gonzalez, Abelardo
MD/UTHSCSA

Guerrero, Jorge A
MD/Guadalajara, Mexico

Johnson, Wendell
DO/UNTHSC-Fort Worth

Stewart, Luther
MD/Meharry Med. College-Nashville

**Instructor**
Griffin, James
MEd/Virginia

**Chief Anesthesia Specialist**
Tarpley, James R
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Bernatek, Thomas J
BSN/UTHSCSA

Cruz, Rinia
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Duckett, LeDana
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Falk, Michael
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Inglis, Fiona M
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Robichaux, Annette
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Sabo, Betsy A
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Saulsberry, A Dale
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Sievert, David
MSN/UTHSCSA

Weaver, John S
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Wilson, Laura
BSN/Washington-Washington, DC
Family and Community Medicine

Professor and Chair
Jaén, Carlos Roberto  
MD, PhD/SUNY-Buffalo

Professor
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PhD/Purdue
Espino, David V  
MD/UTMB Galveston
Furino, Antonio  
JD/Rome
PhD/Houston
Katerndahl, David A  
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MD/UTMB Galveston
Miles, Toni P  
MD, PhD/Howard
Paul, Leonard G  
MD/Ohio State

Professor/Clinical
Calmbach, Walter L  
MD/UTHSCSA

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Realini, Janet P  
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Wichman, Beth Ann  
MD/Rutgers

Associate Professor
Bedolla, Miguel A  
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PhD/Ohio State
Legler, James D  
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Miller, Claudia S  
MD/UTHSCSA
Parchman, Michael Leo  
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Schneider, F David  
MD/Boston

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Bazaldua, Oralia V  
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Doty, Sue  
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Trevino, Juan  
MD/Baylor

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MD/LSU
Mody-Bailey, Priti  
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MD/Colorado
Edwards, Ricky Dale  
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MD/Alexandria
Ferrer, Robert Louis  
MD/Hahnemann Univ
Hernandez, Cristela  
MD/Harvard
Karst, Fernando E  
MD/Nebraska
Kizerian, Gerald D  
PhD/Bringham Young
Knight, John A  
MD/Baylor
Manis, Mary E  
MD/UTMB Galveston
Mouton, Charles P  
MD/Howard
Naranjo, Jesus  
MD/Texas Tech
Parker, Robert W  
MD/Kansas
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Ewing, Dwight S  
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Harvey, Thomas D  
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Hurd, Mark A  
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<th>Name</th>
<th>Affiliation</th>
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<tr>
<td>Gerety, Meghan B</td>
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<td>Graybill, John R</td>
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<td>Hoyumpa, Anastacio M</td>
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<td>Gazit, Yair</td>
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<td>Anzueto, Antonio R</td>
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<td>Bauer, Richard L</td>
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**Radiation Oncology**

**Professor and Chair**

Herman, Terence S  
MD/Connecticut

**Professor**

Meltz, Martin L  
PhD/Rochester

Waggener, Robert G  
PhD/UTHSC Houston

**Associate Professor**

Thomas, Charles R, Jr  
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**Assistant Professor**

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Natarajan, Mohan  
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Salter, Bill J  
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**Clinical Assistant Professor**

Selva, Michael A  
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**Radiology**

**Professor and Chair/Stewart R Reuter Distinguished Professorship**

Dodd, Gerald D, III  
MD/UT Houston

**Professor/Malcolm Jones Professorship**

*Fullerton, Gary D  
PhD/Wisconsin

**Professor/Julio Palmaz Professorship**

Sprague, Eugene A  
PhD/UTHSCSA

**Professor Emeritus**

Reuter, Stewart R  
MD/San Francisco

**Professor & Vice Chair**

Blumhardt, Ralph  
MD/Hanemann Med. College

**Professor**

Bower, James  
PhD/Wisconsin

Chaudhuri, Tuhin K  
MBBS/Calcutta Med. College, India

Chintapalli, Kedar N  
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Fox, Peter T  
MD/Georgetown

Lancaster, Jack L  
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*Graduate Faculty*
McCarthy, Michael J  
MD/Georgetown  

Palmaz, Julio C  
MD/La Plata Med. School, Argentina  

Phillips, William T  
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Clinical Professor  
Bazan, Carlos, III  
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Gao, Jia-Hong  
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Icenogle, Diane  
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Leyendecker, John  
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McKay, Claire  
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Postoak, Darren  
MD/Michigan  

Scott, Riley  
MD/Missouri  

Wholey, Michael H  
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Assistant Professor/Research  
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Dodd, Stephen  
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Hardies, Lou Jean  
PhD/UTHSCSA  

Narayana, Shalini  
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Mumbower, Amy  
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Salman, Umber  
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Spezia, Barbara  
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Kochunov, Peter  
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Marton, Denes  
PhD/Hungarian Academy of Sciences, Hungary  

Roby, John W, III  
BS/Texas A&M  

Rehabilitation Medicine  

Professor and Chair  
Walsh, Nicolas E  
MD/Colorado  

Professor and Deputy Chairman  
Dumitru, Daniel  
MD, PhD/Cincinnati  

Professor  
King, John C  
MD/Oral Roberts  

Ramanurthy, Somayaji  
MD/Kasturba, India  

Schoenfeld, Lawrence S  
PhD/Florida  

Professor Emeritus  
Grant, Arthur E  
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Associate Professor  
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Barmes, Karen  
BS, OT/Kansas  

Currie, Donald M  
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Deffer, Philip A  
MD/Nebraska  

Gall, Norman G  
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Gitter, Andrew J  
MD/Michigan  

Vogel, Kimberly A  
EDD/Baylor-Houston  

Assistant Professor  
Kalantri, Ananthlal  
MBBS/Gandhi Hyderabad, India  

*Graduate Faculty
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School of Allied Health Sciences

Clinical Laboratory Sciences

Professor and Chair
*McKenzie, Shirlyn B
PhD/Texas A&M

Professor
*Smith, Linda A
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The Health Science Center

Mission, Role, and Scope

The University of Texas Health Science Center at San Antonio is a health component institution of The University of Texas System and, as such, is committed to pursue the highest standards of achievement in instruction, student performance, research and scholarly accomplishment, patient care, and service. The Health Science Center has established itself as a major research institution, and its faculty play a major role nationally in the discovery of new knowledge and the search for answers to society’s health care needs. Faculty members engage in teaching, research, and patient care in an interdisciplinary environment—one that encompasses a breadth of expertise that would be impossible to achieve in a single department or school. The Health Science Center will continue to support this integration. An important element of the educational effort is educating primary care health professionals of the highest quality.

Faculty members engage in research and patient care while serving the people of Texas. As members of the only comprehensive academic health science university located in South Texas, the faculty have the unique advantage of focusing research questions on diseases that are prevalent among the citizens of South Texas, the border region, and Mexico. As a leader in health care, the Health Science Center has the responsibility for providing programs and expertise for the ongoing education of the professional and lay communities. The Health Science Center, through its educational and research roles, provides the human and physical resources that facilitate the continuing development of the biosciences in the community and the region. Since the legislative chartering of the Medical School in 1959, The University of Texas Health Science Center, with its five health professional schools, has developed into a major health university in the state, nation, and world.

The mission of The University of Texas Health Science Center at San Antonio includes teaching, research, patient care, and service. Through the undergraduate, graduate, and post-graduate programs, the faculty is committed to the education of health professionals whose lifelong career objectives will be to provide the best possible health care in the most cost-effective way, to apply contemporary treatment modalities, and to seek information that is fundamental to the treatment and prevention of disease.

The institution consists of the Dental School, the Graduate School of Biomedical Sciences, the Medical School, the School of Allied Health Sciences, and the School of Nursing and offers degrees and programs in health-related fields. A Doctor of Pharmacy program is offered jointly with The University of Texas at Austin. In addition, a component of the School of Public Health at The University of Texas at Houston Health Science Center offers the Master of Public Health on this campus.

The School of Allied Health Sciences develops and conducts high-quality educational programs that offer students the opportunity to become competent health care providers in allied health sciences. Included in the school’s programs are certificate, baccalaureate, post-baccalaureate certificate, and master’s degree programs. Certificate programs are offered in dental hygiene, dental laboratory technology, and emergency medical technology. Bachelor’s degrees are offered in clinical laboratory sciences, dental hygiene, dental laboratory sciences, emergency health sciences, and respiratory care. Post-baccalaureate certificates are offered in clinical laboratory sciences and cytogenetics. Master’s programs include a Master of Science in Clinical Laboratory Sciences with tracks in immunohematology and forensic toxicology, Master of Science in Dental Hygiene, Master of Deaf Education and Hearing Science, Master of Occupational Therapy, Master of Physical Therapy, and Master of Physician Assistant Studies. The Emergency Medical Technology Department provides paramedical training for San Antonio, Bexar County, and surrounding areas. The Dental Hygiene Department also conducts collaborative dental hygiene programs with the U.S. Army’s Academy of Health Sciences at Fort Sam Houston, Texas.

The Dental School develops and conducts high-quality educational programs offering the opportunity for qualified students to participate in a program leading to the Doctor of Dental Surgery degree, advanced educational programs in a variety of specialty areas, and advanced General Dentistry. Dental clinical faculty provide these programs in the Departments of Community Dentistry, Dental Diagnostic Science, Endodontics, General Dentistry, Orthodontics, Pediatric Dentistry, Periodontics, Prosthodontics, Restorative Dentistry, and Oral and Maxillofacial Surgery. The Dental School contributes significantly to the body of basic and applied knowledge related to oral health.

The Graduate School of Biomedical Sciences develops and offers high-quality educational programs providing the opportunity for students to pursue Master of Science and Doctor of Philosophy degrees. The Master of Science and Doctor of Philosophy are currently offered in biochemistry, cellular and structural biology, microbiology and immunology, molecular medicine, nursing, pharmacology, physiology, and radiological sciences. Four dental Master of Science degree programs are offered in dental diagnostic science, endodontics, periodontics, and prosthodontics. Master’s degree programs are offered in clinical laboratory sciences, clinical investigation, and dental hygiene. The Graduate School jointly administers, with The University of Texas at Austin, the program in Pharmacy. This program leads to the Doctor of Pharmacy.
degree (Pharm.D.). The Departments of Biochemistry, Cellular and Structural Biology, Microbiology and Immunology, Pathology, Pharmacology, and Physiology provide education in the basic sciences to students in allied health sciences, dentistry, medicine, and nursing. The focus of the Graduate School is the discovery, creative application, and transfer of knowledge to the solution of society’s physical and mental ills.

The Medical School develops and conducts high-quality educational programs offering the opportunity for students to pursue the Doctor of Medicine degree and for residents and fellows to pursue a full range of residency and fellowship training. Medical clinical faculty provide these programs in the Departments of Anesthesiology, Family and Community Medicine, Medicine, Obstetrics and Gynecology, Ophthalmology, Orthopaedics, Otolaryngology-Head & Neck Surgery, Pathology, Pediatrics, Psychiatry, Radiation Oncology, Radiology, Rehabilitation Medicine, and Surgery. Conducting biomedical and other health-related research is an integral role of the Medical School.

The School of Nursing develops and conducts high-quality educational programs offering the opportunity for students to participate in programs leading to the Bachelor of Science in Nursing, Master of Science in Nursing, and Doctor of Philosophy degrees. These educational programs benefit from a faculty that supports competent clinical practice, conducts research focused on patient care, and engages in community service.

Research and Teaching

Faculty excellence at The University of Texas Health Science Center at San Antonio is demonstrated by members’ participation on many national advisory and governing boards and by their election to high offices in national and professional societies. Faculty recruitment efforts emphasize research as well as teaching. The Health Science Center receives millions of dollars annually in new research, training, and public-service grants and contracts for hundreds of projects. The university endowment is growing at an impressive rate.

With the cooperation of medical institutions in the area and the combined resources of the Southwest Research Consortium—composed of The University of Texas Health Science Center, The University of Texas at San Antonio, Trinity University, Wilford Hall Medical Center, Brooke Army Medical Center, St. Mary’s University, the Southwest Foundation for Biomedical Research, Southwest Research Institute, and the Human Systems Center at Brooks City-Base—both basic and clinical research is under way in such fields as cancer, aging, genetics, immunology, cardiovascular disorders, nutrition, arthritis, osteoporosis, psychiatric disorders, AIDS, new drug development, and reproductive biology. The San Antonio Cancer Institute, a partnership of the Health Science Center and the Cancer Therapy and Research Center, is one of only 16 centers approved by the National Cancer Institute for patient trials of new cancer drugs.

The University of Texas Institute of Biotechnology (IBT) and the Robert F. McDermott Clinical Science Building position the Health Science Center as an emerging national leader in biomedicine and clinical research. Located on a 103-acre site in the Texas Research Park, 20 miles west of the UTHSCSA campus, the Health Science Center's IBT is a world-class center of excellence in biomedical research, and is joined in this pursuit by the adjacent South Texas Centers for Biology in Medicine.

The Robert F. McDermott Clinical Science Building, on our North Campus, houses the Research Imaging Center as well as research labs and teaching facilities for the Clinical Pharmacology and Clinical Pharmacy Programs and the Ophthalmology Department.

The Allied Health/Research (AHR) Building is adjacent to the McDermott Building. The AHR Building houses six School of Allied Health Sciences departments and a Graduate School of Biomedical Sciences research center. The departments residing in the AHR Building are: Clinical Laboratory Sciences, Dental Hygiene, Occupational Therapy, Physical Therapy, Physician Assistant Studies, and Respiratory Care. The Graduate School's Center for Biomolecular Structure Analysis has a suite of laboratories in the AHR Building for use by scientists throughout South Texas.

Enrollment

The University of Texas Health Science Center at San Antonio is educating and training nearly 3,000 students annually. Hundreds participate in the Medical School’s four-year program that leads to the M.D. degree. Others master the rigorous curriculum of the Dental School’s D.D.S. program. A dual-degree option provides medical and dental students with an opportunity to obtain M.S. or Ph.D. degrees in addition to the M.D. or D.D.S.

Hundreds of students are enrolled in the programs of the Graduate School of Biomedical Sciences which lead to M.S. and Ph.D. degrees in biochemistry, cellular & structural biology, microbiology and immunology, molecular medicine, nursing, pharmacology, physiology, and radiological sciences; and an M.S. in dental hygiene, clinical investigation, and clinical laboratory sciences. A Pharm.D. program in Pharmacy is offered jointly with The University of Texas at Austin. Advanced education dental programs leading to M.S. degrees are administered by the Graduate School.

The School of Nursing provides the final two years of a professional nursing program leading to a B.S. in Nursing for hundreds of baccalaureate students. The school provides faculty instruction for M.S.N. and Ph.D. degree programs.

Hundreds of students also are enrolled in various School of Allied Health Sciences programs—Clinical Laboratory Sciences, Deaf Education and Hearing Science, Dental Hygiene, Dental Laboratory Technology, Emergency Medical Technology, Occupational Therapy, Physical Therapy, Physician Assistant Studies, and Respiratory Care.
Size
The institution occupies a campus of approximately 127 acres on the city’s Northwest Side within the boundaries of the South Texas Medical Center complex, 103 acres at the Texas Research Park, plus several other sites city-wide. UTHSCSA’s physical plant, valued in the hundreds of millions, is composed of the Medical, Dental, Nursing, Allied Health/Research, and Robert McDermott buildings, as well as a multidisciplinary lecture hall, library, auditorium, cafeteria, the University Plaza building, Institute of Biotechnology, South Texas Centers for Biology in Medicine, and administration and auxiliary service buildings. Construction has been continuous on the campus since the original Medical School building was begun in 1966.

The annual budget for operations exceeds $330 million. About 5,000 faculty and staff are employed on the campus.

Location
The Health Science Center site was donated to The University of Texas System by the San Antonio Medical Foundation, which oversees development in the surrounding South Texas Medical Center. The complex is made up of facilities dedicated to patient care, education, and research, including seven major hospitals.

San Antonio, the nation’s eighth largest city, provides rich cultural and academic resources for institutions of higher education. Ten colleges and universities dot the San Antonio metropolitan area known for its medical and biomedical research, outstanding museums and galleries, renowned San Antonio Zoo, the Alamo and other historical Spanish missions, famous downtown River Walk (Paseo del Rio), major military installations, historic districts, theme parks, symphony orchestra, San Antonio Spurs professional basketball team, The Alamodome, parks, and thriving tourist trade. More than 250 years old, San Antonio is a multicultural community only 150 miles from the Mexican border. Its temperate climate allows year-round outdoor activity.

Teaching Affiliates
The Regional Academic Health Center (RAHC) of UTHSCSA is located in the Lower Rio Grande Valley. Clinical training for third- and fourth-year medical students at the Regional Academic Health Center began in July 2002. Twenty-four third-year medical students and twenty-four fourth-year medical students are assigned to receive their clinical training at the Regional Academic Health Center and its affiliated clinical sites. These clinical sites include Valley Baptist Hospital and Su Clinica Familiar, both located in Harlingen, Texas. Other clinical sites to be included or are under development are community clinics and the offices of private-practice physicians from throughout the Lower Rio Grande Valley area. Assignments to the Regional Academic Health Center will, to the extent possible, be based on student preference. Final decisions, however, about such placements will be made by the Dean of the Medical School.

San Antonio
Many institutions in San Antonio provide excellent resources for programs of the Health Science Center. Some members of the staffs of these organizations hold joint appointments in the Dental, Graduate, Medical, or Nursing Schools and participate in educational research programs. These institutions constitute an important resource for training students as well as providing needed laboratory space for conducting research.

University Hospital, operated by Bexar County's University Health System, adjoins the Health Science Center and is connected to the Medical School at several levels. Planned integrally with the Medical School, it is a 12-story facility providing all general hospital and most tertiary care services. The hospital has approved post-graduate training programs in anesthesiology, surgery, internal medicine, obstetrics/gynecology, ophthalmology, orthopaedic surgery, otolaryngology/head & neck surgery, neurosurgery, thoracic surgery, pathology, pediatrics, rehabilitation medicine, psychiatry, radiology, urology, and family practice, as well as more than 20 additional subspecialty residencies and fellowships.

The University Health Center Downtown is an outpatient health center featuring more than 103 specialty clinics as well as adult and pediatric walk-in clinics. Thousands of outpatient visits are conducted there each year. The University Family Health Center-Southwest and the University Family Health Center-Southeast are community-based outpatient health care centers offering preventive screenings and family health care.

The South Texas Veterans Health Care System, Audie Murphy Division, with a bed capacity of 462 for medical, surgical, and psychiatric patients, serves 59 counties of Southwest Texas. The facility provides 40,000 square feet of space for research. It is linked by a crosswalk to University Hospital.

The CHRISTUS Santa Rosa Health Care System includes the general hospital, Children’s Hospital, Otto Koehler Radiation Therapy and Research Unit and the Outpatient Clinic in downtown San Antonio, and the CHRISTUS Santa Rosa Rehabilitation Hospital and CHRISTUS Santa Rosa Northwest Hospital, located in the South Texas Medical Center. The CHRISTUS Santa Rosa Health Care system provides primary and specialized patient care, emphasizing pediatrics, orthopaedics, nuclear medicine, neurosurgery, and thoracic surgery. Residency training is available in several specialties on a cooperative basis with the University Health System.

Brooke Army Medical Center, a major military treatment facility, has a bed capacity of 450 and offers definitive medical and surgical care for Army and other authorized personnel. It also provides outpatient care; and internships and residency training programs are available. The United States Army Institute of Surgical
Research at Brooke has gained international renown for its outstanding research and excellence in the treatment of serious burn cases.

The Wilford Hall USAF Medical Center is a component of the Aerospace Medical Division of the Air Force Systems Command. It operates a 288-bed general hospital that admits more than 15,000 patients annually, and its clinics register nearly a million visits from outpatients each year.

The Baptist Health System, comprising five hospitals totalling more than 1,500 licensed beds, provides a wide range of hospital services, emergency care, and a variety of educational programs throughout San Antonio. The University Health System collaborates with the Baptist Health System in providing aeromedical helicopter services for San Antonio and the surrounding region.

The University Center for Community Health, another component of the University Health System, is located in west San Antonio. Components include the Village of Hope, an ambulatory care center for children with developmental disabilities, and an outpatient hemodialysis unit. The Texas Diabetes Institute provides a state-of-the-art patient care and education unit, and a clinical research center.

The University of Texas at San Antonio Cancer Therapy and Research Center (CTRC) is a freestanding, multidisciplinary, nonprofit outpatient cancer treatment and research facility located in the South Texas Medical Center. Its clinical programs involve outpatient radiotherapy and chemotherapy and provide care for more than 250 patients daily. The research program involves three major activities: the Southwest Oncology Group is the largest clinical trials organization in the world, coordinating the activities of several thousand investigators in hundreds of institutions throughout the country; the San Antonio Cancer Institute is a joint venture between the Health Science Center and CTRC and is one of a small network of National Cancer Institute (NCI)-Designated Cancer Centers in the United States selected by the NCI to receive funding to conduct Phase I clinical trials of anticancer drugs.

The Children’s Cancer Research Institute (CCRI) concentrates on the epidemiology of children’s cancer in the South Texas border region, identifying new targets of therapy in childhood cancer, new drug development, and research in cancer prevention. The CCRI is located on our north campus (8803 Floyd Curl Drive), between the CTRC and Allied Health/Research Building.

The University of Texas at San Antonio, a major general academic university offering both undergraduate and graduate programs, is located on a 600-acre campus five miles north of the Health Science Center and an urban campus in downtown San Antonio. Cooperative teaching and research between the two institutions is in progress.

The U.S. Air Force School of Aerospace Medicine, located at Brooks City-Base, is active in research and development in medical aspects of aerospace flight, in clinical practices of special interest to aerospace, and in post-graduate education in aerospace medicine and allied subjects.

The Child Guidance Center at San Antonio, a nonprofit tax-exempt organization, treats young people through age 17 who are suffering mental and emotional ills. Methods of treatment include individual therapy, family therapy, parent counseling, medication, and group therapy sessions. The Guidance Center treats approximately 1,500 patients a year in addition to those served under consultation contracts. Through an affiliation agreement with UTHSCSA, the Center provides training for students in the mental health field.

An affiliation agreement is maintained between The University of Texas Health Science Center at San Antonio and the Southwest Foundation for Biomedical Research. This agreement allows the two institutions to share facilities and faculty. The Southwest Foundation’s staff works primarily in the fields of cancer and heart, endocrine, and infectious disease with emphasis upon virology and parasitology. The Foundation has 155,000 square feet of offices and laboratories. A large indoor and outdoor animal facility houses a primate colony and other animals to support the biomedical research effort.

An agreement between the Health Science Center and the Southwest Research Institute allows cooperation in research. The Southwest Research Institute, a nonprofit applied research organization, has its headquarters in San Antonio and also has laboratories in Houston and Corpus Christi and an office in Washington, D.C. The staff conducts research and development projects that include a broad spectrum of the biological and physical sciences.

Southwest Mental Health Center is a private nonprofit 60-bed psychiatric hospital offering treatment to severely disturbed children and adolescents. In continuous service to the San Antonio community since 1886, the institute serves adolescent and preadolescent children. Multidisciplinary treatment teams consisting of clinical psychologists, psychiatric social workers, special educators, nursing and child care personnel, and recreational/occupational therapists implement the patients’ treatment plan under the direction of the child psychiatry staff. The hospital contains six inpatient units, each housing eight to twelve patients for stays of approximately 90 days. A major component of the UTHSCSA Child Psychiatry Training Program, the Center is a training site for child psychiatry residents and clinical psychology residents. Social workers and special education and nursing students from several area universities gain clinical experience at this institution as well.

The School of Allied Health Sciences maintains clinical affiliation agreements with more than 250 clinical sites throughout Texas and the nation where students receive substantial portions of their professional education.

The School of Nursing is affiliated with more than 150 community facilities that serve as practice sites for graduate and undergraduate students.
The Dental School is affiliated with a number of federally qualified community health centers, local health departments, hospitals, school districts, mental health facilities, military facilities, and nursing homes in San Antonio, Bexar County, South Texas, Central Texas, and East Texas, as well as Indian Health Service facilities located throughout the United States and other international institutions that serve as clinical training sites in: (a) primary care, (b) preventive dentistry, (c) emergency care and hospital dentistry, (d) alternative dental care delivery, using mobile and portable dental equipment at outreach sites, and (e) practice management training in the offices of private practitioners. Preclinical and clinical dental students, as well as post-graduate students receive training at the various sites where they are supervised by full and/or part-time faculty as well as adjunct faculty.

Laredo Campus Extension
The School of Allied Health Sciences offers two of its degree programs in Laredo as part of the Laredo Campus Extension: Bachelor of Science in Respiratory Care and Master of Occupational Therapy. Most of the coursework is provided through distance learning and Web-based courses. Educational partnerships with Laredo Community College and Texas A&M International University allow students to complete general education and prerequisite courses in preparation for admission to the professional curriculum. Laredo area hospitals and health agencies provide excellent sites for clinical education.

The Dental School offers Postgraduate Prosthodontic Residency rotations to the Gateway Community Health Center in Laredo.

Other Affiliated Institutions & Programs
The South Texas Area Health Education Center (AHEC) is a federally funded program of the UTHSCSA Medical School and targets a 38-county region of South Texas. Its primary mission is to improve the quantity, quality, and maldistribution of health professionals in this geographic region. It operates through five regional administrative centers located in Corpus Christi, Harlingen, Laredo, Del Rio, and San Antonio. These administrative centers determine local community health professional manpower needs, establish priorities by working with community advisory committees, and negotiate with institutions of higher education and health care facilities to acquire educational and clinical training activities addressing identified needs. The network has enhanced the availability of remote clinical experiences for medical, dental, allied health, nursing, public health, and pharmacy students. An extensive community-academic partnership has been established with community-based institutions of higher education, health care facilities, health professional providers, and secondary educational systems throughout the region.

South Texas Environmental Education and Research Center (STEER)
The center offers an elective course in environmental and border health in Laredo, Texas, for medical students and residents, and students in other health fields. STEER also is involved in research and community activities such as a study of asthma among schoolchildren, and a project to help residents in border colonies chlorinate their drinking water. The center began in 1996 with funding from the South Texas/Border Region Health Education Initiative.

South Texas Health Research Center
Begun in 1989 by Texas Senate Bill 222, the South Texas Health Research Center conducts research and education programs to improve the health status of 3.7 million people living in 41 counties in South Texas and has developed over 102 intramural research projects to meet South Texas needs. The center awards small grants to faculty to conduct research and education programs tailored to meet the specific needs of South Texas, a growing population that is predominantly Hispanic and shares a border with Mexico.

Hispanic Center of Excellence
The Hispanic Center of Excellence provides a variety of student programs including summer pre-matriculation, summer research, mentorship and tutoring program. The center also offers medical Spanish courses for all first and second year medical students, as well as a fourth-year Spanish-speaking-only patient rotation. The center works closely with the STEER and AHEC programs to place students in clinical rotations in South Texas.

Health Education Training Center (South Central HETCAT)
The purpose of the program is to improve the supply, distribution, quality, and efficiency of personnel providing health services to Hispanic and other populations with serious unmet health needs, particularly along the U.S.-Mexico border. This program may include both urban and rural populations, and encourages health promotion and disease prevention activities in the target areas.

UTHSCSA Support Services
Office of Student Services
The Office of Student Services represents students’ needs and provides support for student development. The Executive Director of Student Services oversees the areas of admissions and registration, academic and facilities scheduling, counseling, health care, recreation, student life, and student financial aid.

Scheduling of student activities is coordinated with the Associate Vice President’s office. The Associate Vice President accepts inquiries about and interprets school policies for students.

More detailed information about services offered by Student Services’ components is contained in the UTHSCSA Student Guide.
Academic and Facilities Scheduling
The Academic and Facilities Scheduling Division:
• develops curriculum schedules for UTHSCSA undergraduate, graduate, and postgraduate programs;
• calculates course credit hours for all UTHSCSA courses;
• develops and publishes Academic Calendars for each of the five health professional schools and Dental School Advanced Education Program; and
• authorizes and schedules the use of UTHSCSA facilities (the facility scheduling process and priorities are set forth in the UTHSCSA Handbook of Operating Procedures).

Counseling Service
The following services for academic, personal adjustment, and career problems are provided.
• Individual counseling which includes brief consultation or therapy for issues such as personal or family crisis, adjustment to school, relationship problems, depression, anxiety, interpersonal conflicts, or any aspect of behavior which interferes with effective performance
• Couples counseling for students and their partners who are experiencing relationship problems
• Psychological assessment and career consultation, test-based consultation on career or specialty choice, as well as evaluation of learning abilities and style. The Counseling Service does not provide evaluations for educational or testing accommodations.
• Off-campus referral sources are provided to students requesting accommodation in an educational program.
• Psychiatric consultation, which includes diagnostic and medication evaluations
• Workshops for test taking, study skills, stress management, and other topics
• Consultation for alcohol or other drug misuse
• Consultation for issues related to sexual harassment
All services are confidential. There are no fees. Appointments can be made by phone (567-2648) or in person. Crisis appointments are provided on request. Counseling Service is located in Room 101F, Medical School building. To reach 101F, take the elevator, adjacent to the Medical School Courtyard, to Level 1. Counseling Services is located directly opposite the elevator door.

Registrar
The custodian of student academic records, the Registrar is also responsible for the processes of admissions, enrollment, withdrawals, and graduation. The decisions of various academic committees are implemented by this office. The staff handles students’ questions about their records, provides transcripts, and provides veterans and enrollment certification documents.

Student Financial Aid
Students seeking financial assistance in the form of scholarships, grants, and/or loans may seek the help of the Office of Student Financial Aid. Counselors specializing in our five individual schools are available. The office offers all forms of assistance, including need-based and non-need-based forms of aid. Students must be accepted for admission prior to receiving an offer of assistance.

Student Health Services
Across Medical Drive from University Hospital at 4647 Medical Drive (UPG Diagnostic Pavilion), Student Health Services provides the professional care generally available from physicians. Students may use the services for treatment of illness or injury, periodic examinations, family planning, and immunizations. These health services are supported by the Medical Services Fee. The appointment telephone number is 592-0150.

Dependents are not covered by the Medical Services Fee but may be covered by payment of an optional fee. Student Health Services accepts most commercial insurances for the services that are not covered under Student Health Services. Those students and their immediate family members who are not insured and are Bexar County residents may qualify for the Carelink program to assist with their extra medical and prescription expenses.

Student Life
In support of the mission of the University as a whole, the Office of Student Life serves to ease the transition of students into and from the Health Science Center and to support their holistic development at all points in between. In collaboration with other University community members, this office “connects” students to the University through programs and activities such as new student orientation, the peer advisor program, student organizations and activities, recreational sports, and commencement. For detailed information about the Office of Student Life, student organizations, recreational sports, etc., consult the UTHSCSA Student Guide.

Office of Educational Resources
The Office of Educational Resources provides support for the educational functions of the Health Science Center. The divisions of Multimedia and Web Services, Printing Services, and Television Production Services aid the faculty and administration in the development and implementation of instructional programs.

Computing Resources & Computer Store
The Department of Computing Resources provides support for the computing services on campus. Computing Resources’ Triage help desk (ext. 7-2069) is available weekdays, from 8 a.m. to 5 p.m., to answer questions, consult on computer issues, and troubleshoot problems concerning UTHSCSA’s information resources. Students are issued an electronic mailing address when they register for classes. Access to electronic mail is available through the students’ personal computers and/or workstations located in the Briscoe Library. In addition, students may obtain personal Internet access utilizing the contracted Internet Service Provider by visiting Triage in Room 411L.
Campus Facilities

The property, buildings, or facilities owned or controlled by The University of Texas Health Science Center at San Antonio are not open for assembly, speech, or other activities. The responsibility of the UT System Board of Regents to operate and maintain an effective and efficient system of institutions of higher education requires that the time, place, and manner of assembly, speech, and other activities on the grounds and in the buildings and facilities of the UT System or component institutions be regulated.

No person, organization, group, association, or corporation may use property, buildings, or facilities owned or controlled by UTHSCSA for any purpose other than in the course of the regular programs or activities related to the role and mission of the university, unless authorized by the Regents’ Rules and Regulations. Any authorized use must be conducted in compliance with the provisions of the Regents’ Rules and Regulations, the university’s Handbook of Operating Procedures, and applicable federal, state, and local laws and regulations.

For more information, consult the Regents’ Rules and Regulations and the university’s Handbook of Operating Procedures. More detailed information on the campus facilities described below, as well as information about student lounges, group study rooms, self-service photocopying areas, etc., is contained in the UTHSCSA Student Guide.

Access to Campus Facilities

Events Jointly Sponsored by a Health Science Center Department and an Outside Organization

Policy. Outside organizations may not use Health Science Center facilities except with the joint sponsorship of a Health Science Center department. The Health Science Center may recommend joint sponsorship of a project or program only if (1) the educational implications are self-evident and directly supplement the educational purposes of the institution and the academic or administrative mission of the department recommending sponsorship; and (2) there will be no private gain for the cooperating individuals, group, or association. The Health Science Center sponsor, when entering into a joint sponsorship of any program, assumes full responsibility for all details, including cost, as well as approval of subject, contents, and publicity for the event. An “Outside Agency Facilities Use Request” should be completed and sent to Facilities Scheduling. Regents’ Rules and Regulations apply.

Charges. To the extent that there are charges for Health Science Center services (e.g., printing, housekeeping, security, etc.) for the event, such charges shall be paid by the sponsoring department. It is the responsibility of the sponsoring department to determine an appropriate level of reimbursement, if any, from the outside entity cosponsoring the event and obtain such payments and deposit such payments to the accounts from which charges for the event were made. Regents’ Rules and Regulations apply.

Visiting the Campus

The Health Science Center welcomes visitors from the community when arranged with prior notice. To obtain information about ongoing prearranged tours for students, call (210) 567-3941. Others interested in a campus visit to a specific school or area within the Health Science Center should contact the office of the respective dean or vice president. Access to certain areas within the institution may be restricted to ensure public safety and patient privacy. Restricted areas have their own visitation policy or criterion.

Speech and Assembly Area

The Health Science Center has designated a “free speech” area on campus. Peaceful assembly and speech activities conducted in accordance with applicable state law and Regents’ Rules and Regulations and other university policies as contained in the Handbook of Operating Procedures may be conducted in this area without prior administrative approval. The area designated is on the southeast side of the campus approximately 150 yards northwest of the intersection of Floyd Curl Drive and Louis Pasteur Drive. The location is identified by a 2-foot-square marker.
The Dolph Briscoe, Jr. Library
The Briscoe Library’s collection contains approximately 200,000 books and journal volumes and 2,100 current subscriptions to health sciences journals in print and/or electronic formats. Housed in a 93,000-square-foot multi-level facility in the center of the main campus, the library serves as the primary source and repository of information for the educational, research, and health care functions of the Health Science Center and as a laboratory where students may acquire and use information literacy skills. The collection covers the broad range of health-related sciences—dentistry, medicine, nursing, allied health sciences, and basic biomedical sciences. MEDLINE and other computer databases are available in the library and via remote access and can be searched on the powerful, user-friendly OVID System. The Library Computer Center provides 70 computers with e-mail access and software for student use. The satellite Brady Green Library is located at the University Health Center Downtown and a circuit librarian health information service is provided to participating hospitals in South Texas.

Bookstore
The University’s Bookstore is located on the first floor of Parking Garage B, next to the School of Nursing. The hours of operation are from 8 a.m. to 6 p.m. Mondays through Thursdays and 8 a.m. to 5 p.m. Fridays. The Bookstore will be closed on University holidays. Textbooks, medical equipment and scrubs, multimedia and software, oral hygiene and dental laboratory supplies, University logo gift items, sundries, and greeting cards are for sale. Special orders are welcome. Visit the Bookstore Web site at http://uthscsa bkstore.com/

Conference Center
The Parman House Conference Center, an off-campus facility for small group meetings, can accommodate groups of up to 40 persons (50 persons theater style) for academically related programs and professional development programs. Used as a guest house by former owners, it is part of The Parman House property donated to the Health Science Center in 1985 by Dan F. Parman and family.

Auditorium
The 634-seat auditorium on the Health Science Center campus is used for examinations, lectures, convocations, continuing education courses, professional meetings, and community functions sponsored by the university. Exhibits and gatherings are held in the glass-enclosed foyer.

Cafeterias
Students, faculty, and staff may purchase meals in the Health Science Center’s Cafeteria, connected to the ground floor of the Dental School’s south end; the Patio Cafe/Deli in the Allied Health/Research Building; the University Subway Shop, located in the Lecture Hall Foyer; Java City coffee and yogurt, also located in the Lecture Hall Foyer; and the cafeteria in University Hospital.

Housing
There are no housing accommodations on the campus of the Health Science Center. Apartments, condos, and rental homes, however, are abundant in the area. Students may contact the Office of Student Life for the housing list (567-2654).

Parking
Students may park in the zone for which they purchase a permit. Maps detailing parking areas are included in the 2003–2005 UTHSCSA Student Guide.

Transportation
Buses operated by the metropolitan transit system service the Medical Center area from all parts of the city and within the Center. Student rates are provided. A University shuttle runs continually between the main campus area and the Allied Health/McDermott buildings; the route includes University Plaza, Lot 17, and the UPG Diagnostic Pavilion on Medical Drive. Also, there are four daily runs to the Texas Research Park. There is no fee for the shuttle services to members of the UTHSCSA community.

Accessibility for the Disabled
Every program is accessible to students who have a disability, and every area has disabled-accessible restrooms. The University Police Department provides a map which indicates parking areas designated for the disabled.

Interior and exterior doors have been adjusted to conform with the American National Standards Institute specifications for physically disabled people. Students who may need special arrangements or auxiliary aids because of physical disability are encouraged to discuss these requirements with their associate deans.

Additional Information
Statistics such as enrollment totals and faculty directories are kept updated on the Health Science Center’s Web site at www.uthscsa.edu.
Students enrolled in the Health Science Center are subject to all established requirements and regulations of this institution as well as those of any support institution in which they may be enrolled. The UTHSCSA Catalog and the UTHSCSA Student Guide, given to matriculating students and available in the Office of Student Services, contain these requirements and regulations.

Student Background Checks
Recognizing a sound character is vital to health care professions, The University of Texas Health Science Center at San Antonio may require applicants or admitted students to undergo criminal background checks. Students shall conform to the specific policy and procedure adopted by each specific program/school for which the students apply or are admitted.

Conduct and Discipline
Students are responsible for knowing and observing the university’s “Procedures and Regulations Governing Student Conduct and Discipline” and the Rules and Regulations of the Board of Regents of The University of Texas System. Copies of the regulations are printed in the Student Guide. In addition to these regulations, standards of professional conduct may be set by each school of the Health Science Center.

In summary, the Regulations provide that:
Violations of University regulations concerning standards of conduct which compromise professional integrity and/or competence shall be dealt with under “Procedures and Regulations Governing Student Conduct and Discipline.” The Associate Vice President for Student Services shall have responsibility for the administration of discipline in areas not directly related to the academic or professional training of the student. Procedures described in the “Procedures and Regulations Governing Student Conduct and Discipline” of the Health Science Center will be followed.

The dean of each school shall have the responsibility for the administration of discipline in cases concerning academic dishonesty and professional misconduct.

The full text of the Rules and Regulations of the Board of Regents and the university’s “Procedures and Regulations Governing Student Conduct and Discipline” should be consulted in reference to any questions concerning student conduct and discipline.

The due process rights afforded a student subject to disciplinary sanctions are governed by Chapter VI Part 1, Rules and Regulations of the Board of Regents of The University of Texas System and the Health Science Center’s “Procedures and Regulations Governing Student Conduct and Discipline.”

Professional Conduct Guidelines
Students are expected to conduct themselves in a professional manner, not only in interaction with patients, but also with peers, faculty, and staff of the Health Science Center and the community in general. In addition to conventional academic tests and measurement criteria for assessment, students will be evaluated on issues relating to their professional conduct/judgement according to the previously defined standards of the school, program, and profession for which they are in training. The professional discipline/school in which the student is enrolled may have specific codes of conduct in addition to the general guidelines (see the Student Guide).

Student Grievance Procedures
I. Student Academic Grievance Procedure

Academic-related grievances must be submitted in writing to the department chair or other designated administrator of the academic program to which the grievance relates. The written grievance must be received no later than four calendar weeks after the alleged incident.

The dean of the school in which the student is enrolled has jurisdiction over the student’s program of study, degree requirements, and all other academic matters, including grievances. Depending upon the specific school, there may be some differences in codes of professional conduct and related issues. Appeals may be made to the Dean, the Executive Vice President for Academic and Health Affairs, then to the President. The President’s decision is final.

II. Student Nonacademic Grievance Procedure

Any student who has a nonacademic grievance concerning the interpretation, application, or claimed violation of her/his rights as a UTHSCSA student or who feels he/she has been discriminated against or harassed on the basis of age, color, disability, family status, gender, national origin, race, religion, veteran status, sexual orientation, or sexual harassment has the opportunity to seek resolution of such grievance.

This policy also may include any official publication of the Health Science Center that may be perceived to be misleading or a misrepresentation of the facts. In cases where the complaint is related to official publications, the complaints may be submitted, in writing, at any time to the Associate
III. Procedure for Informal Resolution

A student who feels that he/she is a victim of harassment or discrimination or who feels that her/his rights as a student have been violated, may attempt to resolve the matter informally; the student may schedule a discussion or conference with the individual accused of the act, omission, or issue over which the student grieves. The informal discussion(s) or conference(s) should be conducted less than 30 calendar days from the date the student knew or should have known of the offensive act or issue—if an informal resolution is not forthcoming, the student has a time limit of 30 calendar days from the date he/she knew or should have known of the offensive act or issue to file a formal written grievance. (See Section IV, A.)

IV. Procedure for Formal Resolution

This procedure is intended to provide students with an opportunity to formally grieve any perceived act, omission, or issue of a nonacademic nature which adversely affects the grieving student and for which no other grievance or appeals procedure is provided in The University of Texas System or in the policies or procedures of The University of Texas Health Science Center at San Antonio.

Students considering filing a grievance may contact the Associate Vice President for Student Services or the appropriate associate dean of student affairs to receive instructions. (See Section III: Procedures Subsections 3-100–3-500 of the “Procedures and Regulations Governing Student Conduct and Discipline” in the Student Guide.)

A. The formal written grievance should be initiated as soon as possible.

If the student chooses not to attempt informal resolution of a grievance, he/she must file a formal written grievance not more than 30 calendar days from the date he/she knew or should have known of the offensive act or issue. If the student attempts informal resolution and then chooses to file a formal written grievance, he/she should file the written grievance within five working days from the last informal attempt at resolution. Also, the formal written grievance must be filed not more than 30 calendar days from the date the student knew or should have known of the offensive act or issue.

B. The student may file the written grievance, setting out a complete description of the grievance (and the proposed remedy). If the accused individual is a UTHSCSA employee, the employee’s immediate supervisor receives the written grievance. The deans and/or the Associate Vice President for Student Services can assist students in identifying the accused individual’s supervisor, so that the written grievance may be filed with the appropriate person.

If the accused individual is a student, the written grievance is given to the associate dean of student affairs of the accused student’s school.

Where the grievance does not involve an individual, the grievance may be filed with the administrator responsible for the program issue or issues involved. Copies of the grievance will be made available to the grievant, the associate dean of her/his school, the individual accused of the act or omission grieved, the accused individual’s supervisor, and the administrator to whom the grievance is presented.

C. The administrator hearing the grievance may, at her/his discretion, hold discussions with or without the accused to hear and resolve the grievance, schedule a meeting between the student and the party accused, and/or involve other parties in facilitating a resolution of the grievance. The administrator has 10 working days from receipt of the written grievance to resolve the grievance, after which time the student, if not satisfied, may appeal to the dean of her/his
school. If the student wishes an alternate hearing officer, her/his request must be submitted, in writing, to the dean of the appropriate school or to the Executive Vice President for Academic & Health Affairs not more than five calendar days from notification of the hearing.

D. If the decision of the grievance officer is to affirm the grievance, any resulting directive to the accused must be in writing and must be pursuant to a meeting between the accused and the accused’s associate dean or supervisor. Denial of the grievance also must be in writing.

E. Within five working days of the student’s receipt of the decision of the Dean, the student may appeal the Dean’s decision to the EVP. If no decision is rendered by the Dean within 14 working days from the delivery of the written grievance and grievance record may be sent by the student to the EVP. The EVP may take whatever action is deemed appropriate.

F. Within five working days of the student’s receipt of the decision of the Executive Vice President for Academic and Health Affairs (EVP) of the Health Science Center, the student may appeal the EVP’s decision to the President of the Health Science Center. If no decision is rendered by the EVP within 14 working days from the delivery of the written grievance to the EVP, the written grievance and grievance record may be sent by the student to the EVP. The EVP may take whatever action is deemed appropriate.

G. The decision of the President of the Health Science Center is final.

**Student Records**

The University of Texas Health Science Center at San Antonio is in compliance with the Family Educational Rights and Privacy Act of 1974 (20 U.S.C.A. Section 1232g) and the Texas Open Records Act (Article 6252-17a, Vernon’s Civil Statutes) concerning the privacy of educational records and the rights of students to inspect and review those records. (See “Family Educational Rights and Privacy Act” in the Student Guide.) The Associate Vice President for Student Services coordinates the inspection and review procedures for student education records which include admissions, personal, academic, financial, and disciplinary records. The institutional policies are available in the Registrar’s Office. The policy includes the following procedures:

**Privacy Rights of Students**

No one shall have access to a student’s education records without the written consent of the student except for:

- persons within the institution acting in the student’s educational interest and within the limitations of their need to know;
- officials of other institutions in which students seek to enroll;
- accrediting agencies carrying out their accreditation function;
- in compliance with a judicial order;
- persons acting in an emergency in order to protect the health or safety of students or other persons;
- persons or organizations providing students financial aid;
- federal, state, or local officials or agencies authorized by law;
- parents of a dependent student, as defined in section 152 of Internal Revenue Code of 1954, provided a reasonable effort is made to notify the student in advance;
- to an alleged victim of any crime of violence, the results of the alleged perpetrator’s disciplinary proceeding may be released; and
- organizations conducting studies for specific educational purposes. (Organizations must submit a “Request to Review Student Records” form which is available from the Registrar’s Office.)

**Admission Records:** The American Association of Collegiate Registrars and Admission Officers (AACRAO) recommends that student files for any admitted student be reviewed in order to remove any items which have fulfilled their admissions-related purpose but will no longer be required in the student’s academic career. Due to this recommendation by AACRAO, the student file will be reviewed after the student is enrolled and admissions records will be purged using these guidelines.

**Deceased Students:** Records of deceased students, current or former, will be reviewed within 90 days after death and purged of all documents except the barest essentials such as the transcript.

**Directory Information**

Directory information is available on the Web in the Student Telephone Directory at www.uthscsa.edu/studdirect, and may contain a student’s name, school and class, address, telephone number, picture, e-mail address, date and place of birth, degrees and awards received, dates of attendance, major field of study, classification, date of graduation, class schedules, and the most recent previous educational institution attended.

Students may withhold all or part of the directory information except last name, first name, middle initial, school and class by notifying the Registrar in writing within 12 days after the first day of class for every semester.

**Student Right to Access, Copy, and Challenge Educational Records**

Students have the right to inspect and review information contained in their education records. The records will be made available within 45 days after a written request is made to the Associate Vice President for Student Services. Students may have copies of their records. These copies will be made at the student’s expense at rates authorized in the Texas Public Information Act. Official copies of
academic records or transcripts will not be released for students who have a delinquent financial obligation or financial “hold” at the University.

Students have the right to challenge the contents of their education records if they believe the records contain information which is inaccurate, misleading, or otherwise in violation of their privacy or other rights. The full procedure to challenge records is published in the “Family Educational Rights and Privacy Act,” a copy of which appears in the UTHSCSA Student Guide.

Limitations of Student Right to Access, Copy, and Challenge Educational Records

Students cannot inspect or review the following confidential records:
• financial information submitted by their parents;
• confidential letters and recommendations associated with admissions, employment, job placement, or honors to which they have waived their right to inspect; or
• confidential letters and recommendations placed in the files prior to January 1, 1975.

Student right to access does not extend to records of instructional, administrative, and educational personnel, nor to records of the law enforcement unit, student counseling records, or student health records. Health records may be reviewed by a physician of the student’s choice.

Equal Opportunity

To the extent provided by the law, no person shall be excluded from participation in, be denied the benefits of, or be subject to discrimination under any program or activity sponsored or conducted by The University of Texas System or any of its component institutions on the basis of race, color, national origin, religion, veteran status, disability, sex, age, or sexual orientation. The procedure for discrimination complaints can be found in the UTHSCSA Handbook of Operating Procedures, Section 4.2.4.

Professional Liability Insurance

Students enrolled in a health component institution of The University of Texas System in a program that involves direct patient care activities are required to purchase professional liability insurance as a prerequisite to enrollment. The policy extends coverage to the insured only in her or his student role.

Student Health Insurance

The Texas Education Code Section 51.961 requires all Health Science Center students to have continuous health insurance coverage upon enrollment. The requirement may be satisfied by either the student’s enrollment in the UT System-endorsed student health insurance plan, or by the student presenting evidence of comparable health insurance from another source other than the University, following policy guidelines issued by the UT System Chancellor. The current annual premium for a student health policy is $715 per student, and may be included in the calculation of financial need for purposes of determining financial aid awards. The premium amount is subject to review and negotiation with the insurance company which will be conducted in the early part of 2003.

Important Information about Bacterial Meningitis

This information is being provided to all new college students in the state of Texas. Bacterial Meningitis is a serious, potentially deadly disease that can progress extremely fast, so take utmost caution. It is an inflammation of the membranes that surround the brain and spinal cord. The bacteria that cause meningitis can also infect the blood. This disease strikes about 3,000 Americans each year, including 100–125 on college campuses, leading to 5–15 deaths among college students every year. There is a treatment, but those who survive may develop severe health problems or disabilities.

What are the symptoms?
• High fever
• Severe headache
• Vomiting
• Rash or purple patches on skin
• Stiff neck
• Light sensitivity
• Nausea
• Confusion and sleepiness
• Seizures
• Lethargy

There may be a rash of tiny, red-purple spots caused by bleeding under the skin. These can occur anywhere on the body.

The more symptoms, the higher the risk, so when these symptoms appear seek immediate medical attention.

How is bacterial meningitis diagnosed?

• Diagnosis is made by a medical provider and is usually based on a combination of clinical symptoms and laboratory results from spinal fluid and blood tests.

Early diagnosis and treatment can greatly improve the likelihood of recovery.

How is the disease transmitted?

• The disease is transmitted when people exchange saliva (such as by kissing, or by sharing drinking containers, utensils, cigarettes, toothbrushes, etc.) or come in contact with respiratory or throat secretions.

How do you increase your risk of getting bacterial meningitis?
• Exposure to saliva by sharing cigarettes, water bottles, eating utensils, food, kissing, etc.
• Living in close conditions (such as sharing a room/suite in a dorm or group home).

What are the possible consequences of the disease?
• Death (in 8 to 24 hours from perfectly well)
• Permanent brain damage
• Kidney failure
• Learning disability
• Hearing loss, blindness
• Limb damage (fingers, toes, arms, legs) that requires amputation
• Gangrene
• Coma
• Convulsions

Can the disease be treated?
• Antibiotic treatment, if received early, can save lives and chances of recovery are increased. However, permanent disability or death can still occur.
• Vaccinations are available and should be considered for:
  • Those living in close quarters
  • College students 25 years old or younger
• Vaccinations are effective against 4 of the 5 most common bacterial types that cause 70% of the disease in the U.S. (but does not protect against all types of meningitis).
• Vaccinations take 7–10 days to become effective, with protection lasting 3–5 years.
• The cost of vaccine varies, so check with your health care provider.
• Vaccination is very safe – most common side effects are redness and minor pain at injection site for up to two days.

How can I find out more information?
• Contact your own health care provider.
• Contact the Student Health Clinic at 592-0150.
• Contact Web sites:
  www.cdc.gov/ncidod/dbmd/diseaseinfo
  and
  www.acha.org

Absences on Religious Holy Days
In accordance with the Texas Education Code, students may take an examination or complete an assignment missed during the observance of a religious holy day(s) if notification of the planned absence is given to the instructor(s) not later than the 15th day after the first day of the semester. A “religious holy day” is a day observed by a religion whose place of worship is exempt from property taxation under Section 11.20 of the Tax Code.

Notification to instructors must be accomplished by the use of a standard form available from the Registrar’s Office which, upon completion, will meet the policy requirements of the University regarding absences for observance of a religious holy day. The Notification of Planned Absence To Observe a Religious Holy Day form must be initiated by the student and signed and dated by the instructor.

Instructors, upon notification, will stipulate a “reasonable time” in which the student may complete an assignment or take an examination scheduled on the day(s) the student is absent for the purpose of observing a religious holy day. If the student fails to satisfactorily complete assignments or examinations within the stipulated “reasonable time,” loss of credit for work or a failing grade for an examination will result.

This policy will be followed unless it interferes with patient care.

UTHSCSA Policy on Alcohol, Drug, and Chemical Abuse

Purpose
The purpose of this statement is to comply with the federal Drug-Free Schools and Communities Act Amendment of 1989 and the Drug-Free Workplace Act of 1988. The statements provided below also represent Health Science Center policy with regard to the abuse and/or distribution of alcohol, drugs, and/or chemicals by faculty, staff, and students.

Standards of Conduct
1. The illegal possession or use of alcoholic beverages, drugs, or chemicals on any property and in buildings and facilities under the control of the Health Science Center is expressly prohibited.
2. Alcoholic beverages on Health Science Center property are permissible only by prior written Presidential approval for specific events.
3. These standards of conduct apply to ALL persons connected with the institution either as employees or students.
   a. Employees: The use or possession of alcohol or drugs (chemicals) by an employee on Health Science Center premises is defined as misconduct by The University of Texas System “Policies and Procedures for Discipline and Dismissal of Employees.” The unlawful use, possession, or distribution of illicit drugs or alcohol by an employee is prohibited by The University of Texas System “Policy on Drugs and Alcohol.” State law provides that no salary payments be made to an employee who uses alcoholic beverages while on active duty.
      Any employee who is found guilty (including a plea of no contest) or has a sentence, fine, or other penalty imposed by a court of competent jurisdiction under a criminal statute for an offense involving a controlled substance that occurred in or on premises controlled by The University shall report such action to the Director of Human Resources within five (5) days.
   b. Students: Subsection 3.21 of Chapter VI, Part One of the Rules and Regulations of the Board of Regents of The University of Texas System provides for disciplinary action against any student
who engages in conduct that is prohibited by state, federal, or local law. This includes those laws prohibiting the use, possession, or distribution of drugs and alcohol.

4. Violations of this Policy.
   a. Employees: The unlawful use, possession, or distribution of alcohol or drugs will result in a penalty of disciplinary probation, suspension without pay, or dismissal from employment, depending upon the circumstances.
   b. Students: The Health Science Center will impose a minimum disciplinary penalty of suspension for a specified period of time or suspension of rights and privileges, or both, for conduct related to the use, possession, or distribution of drugs that are prohibited by state, federal, or local law. Other penalties that may be imposed for conduct related to the unlawful use, possession, or distribution of drugs or alcohol include disciplinary probation, payment for damages to or misappropriation of property, suspension of rights and privileges, suspension for a specified period of time, expulsion, or such other penalty as may be deemed appropriate under the circumstances.

Health Risks of Alcohol, Drugs, and Chemicals

Alcohol. Health hazards associated with the excessive use of alcohol or with alcohol dependency include dramatic behavioral changes, retardation of motor skills, and impairment of reasoning and rational thinking. These factors result in a higher incidence of injury and accidental death for such persons than for nonusers of alcohol. Nutrition also suffers and vitamin and mineral deficiencies are frequent. Prolonged alcohol abuse causes bleeding from the intestinal tract, damage to nerves and the brain, psychotic behavior, loss of memory and coordination, damage to the liver often resulting in cirrhosis, impotence, severe inflammation of the pancreas, and damage to the bone marrow, heart, testes, ovaries, and muscles. Cancer is the second leading cause of death in alcoholics and is ten (10) times more frequent than in non-alcoholics. Sudden withdrawal of alcohol from persons dependent on it may cause serious physical withdrawal symptoms.

Drugs and Chemicals. The use of illicit drugs and chemicals may cause the same general type of physiological and mental changes seen with alcohol, though frequently those changes are more severe and more sudden. Death or coma resulting from overdose of drugs and chemicals is more frequent than from alcohol, but unlike alcohol, abstinence can lead to reversal of most physical problems associated with drug use. There are also health risks resulting from intravenous drug use. In addition to the adverse effects associated with the use of a specific drug, intravenous drug users who use unsterilized needles or who share needles with other drug users can develop AIDS, hepatitis, tetanus (lock jaw), and infections in the heart. Permanent brain damage may also result. Chemicals, which include solvent inhalants and aromatic hydrocarbons, such as glue, lacquers, and plastic cement, also present health risks. Fumes from these substances cause symptoms similar to alcohol. Hallucinations and permanent brain damage may occur.

Legal Implications of Alcohol and Drug Use

TABLE 1 in the Student Guide, excerpts of which were taken from the Federal Register, provides a summary of illicit drugs and their effects.

Assistance for Employees and Students

Employees and students of the Health Science Center in need of assistance with an alcohol or drug abuse problem may take advantage of professional referral programs.

Employees. The Department of Psychiatry maintains a Substance Abuse Treatment Clinic, which is located on the third floor of University Health Services. Health Services provides comprehensive evaluation and treatment for persons who have alcohol, drug, and other chemical dependency problems. Many private community organizations also are involved in rehabilitation programs for alcohol and drug impairment.

The Department of Psychiatry sponsors the START Center, 3939 Medical Drive, a center for treatment and research in alcohol and drug addiction. Employees are welcome to seek consultation at the START Center, 562-5400. Employees may also use the services of the Employee Assistance Program, 226-3391, for consultation and referral. Community resources can be found in the blue pages of the San Antonio telephone directory.

Students. The Counseling Service in the Office of Student Services provides evaluation, referral, consultation, and education. All services and records are confidential. Counseling Service records are professional health records which are confidential. Counseling Service records are not a part of the student’s university record. A student may request to review her/his record. Counseling Service records or summaries of service are provided only with the written authorization of the student. Seeking consultation or receiving treatment for alcohol or drug abuse is not an impediment to making progress in a student’s academic program.

Alcohol on Campus

The use of intoxicating beverages is prohibited in classroom buildings, laboratories, auditoriums, library buildings, faculty and administrative offices, intramural athletic facilities, and other public campus areas.
Hazing in state educational institutions is prohibited by both state law (Sections 51.936 and 37.151 et seq, Texas Education Code) and by the Regent’s Rules and Regulations (Part One, Chapter VI, Section 3.28). Individuals or organizations engaging in hazing could be subject to fines and charged with criminal offenses. Additionally, the law does not affect or in any way restrict the right of the University to enforce its own rules against hazing.

According to the law, a person commits a hazing offense if the person engages in hazing; solicits, directs, encourages, aids, or attempts to aid another in hazing; intentionally, knowingly, or recklessly allows hazing to occur; or fails to report firsthand knowledge that a hazing incident is planned or has occurred in writing to the Associate Vice President for Student Services. The fact that a person consented to or acquiesced in a hazing activity is not a defense to prosecution for hazing under this law.

An organization commits an offense if the organization condones or encourages hazing or if an officer or any combination of members, pledges, or alumni of the organization commits or assists in the commission of hazing.

The law defines hazing as any intentional, knowing, or reckless act, occurring on or off the campus of an educational institution, by one person alone or acting with others, directed against a student, that endangers the mental or physical health or safety of a student for the purpose of pledging, being initiated into, affiliating with, holding office in, or maintaining membership in an organization whose members are or include students at an educational institution.

Hazing includes but is not limited to:

1. any type of physical brutality, such as whipping, beating, striking, branding, electronic shocking, placing of harmful substance on the body, or similar activity;
2. any type of physical activity, such as sleep deprivation, exposure to the elements, confinement in a small place, calisthenics, or other activity that subjects the student to an unreasonable risk of harm or that adversely affects the mental or physical health or safety of the student;
3. any activity involving consumption of food, liquid, alcoholic beverage, liquor, drug, or other substance that subjects the student to an unreasonable risk of harm or which adversely affects the mental or physical health or safety of the student;
4. any activity that intimidates or threatens the student with ostracism; that subjects the student to extreme mental stress, shame, or humiliation; or that adversely affects the mental health or dignity of the student or discourages the student from entering or remaining registered in an educational institution, or that may reasonably be expected to cause a student to leave the organization or the institution rather than submit to acts described in this subsection; and
5. any activity that induces, causes, or requires the stu-
dent to perform a duty or task which involves a violation of the Penal Code. The fact that a person consented to or acquiesced in a hazing activity is not a defense to prosecution.

Any student who engages in conduct that constitutes hazing is subject to disciplinary action regardless of whether he or she is charged with a criminal offense.

Part One, Chapter VI, Section 3.28, of the Rules and Regulations of the Board of Regents of The University of Texas System, provides that:

1. Hazing with or without the consent of a student is prohibited by the System, and a violation of that prohibition renders both the person inflicting the hazing and the person submitting to the hazing subject to discipline.

2. Initiations or activities by organizations may include no feature which is dangerous, harmful, or degrading to the student, and a violation of this prohibition renders both the organization and participating individuals subject to discipline.

Activities which under certain conditions constitute acts that are dangerous, harmful, or degrading, in violation of Rules include but are not limited to:

• calisthenics, such as sit-ups, push-ups, or any other form of physical exercise;
• total or partial nudity at any time;
• the eating or ingestion of any unwanted substance;
• the wearing or carrying of any obscene or physically burdensome article;
• paddle swats, including the trading of swats;
• pushing, shoving, tackling, or any other physical contact;
• throwing oil, syrup, flour, or any harmful substance on a person;
• rat court, kangaroo court, or other individual interrogation;
• forced consumption of alcoholic beverages either by threats or peer pressure;
• lineups intended to demean or intimidate;
• transportation and abandonment (road trips, kidnap, walks, rides, drops);
• confining individuals in an area that is uncomfortable or dangerous (hot box effect, high temperature, too small);
• any type of personal servitude that is demeaning or of personal benefit to the individual members;
• wearing of embarrassing or uncomfortable clothing;
• assigning pranks such as stealing, painting objects, harassing other organizations;
• intentionally messing up the house or room for clean up;
• demeaning names;
• yelling and screaming; and
• requiring boxing matches or fights for entertainment.

In an effort to encourage reporting of hazing incidents, the law grants immunity from civil or criminal liability to any person who reports a specific hazing event in good faith and without malice to the Associate Vice President for Student Services and immunizes that person from participation in any judicial proceeding resulting from that report. The penalty for failure to report is a fine of up to $1,000, up to 180 days in jail, or both. Penalties for other hazing offenses vary according to the severity of the injury which results and range from $500 to $10,000 in fines and up to two years confinement.

The law does not affect or in any way limit the right of the university to enforce its own rules against hazing.

Immunization Requirements
Prior to Registration, all students are required to have completed the immunizations outlined below.

Hepatitis B
All Allied Health, Dental, Medical, Nursing, and certain Graduate students, specifically those students having direct patient care or those students who come in contact with human biological fluids/tissue, are required to complete the series of three hepatitis B immunizations or show proof of immunity within six months of enrollment.

Tuberculosis
A skin test for tuberculosis is required of all students within 12 months prior to registration. All students are required to be tested on a yearly basis. Students who have not been tested within the last year are restricted from registration. Students testing positive for tuberculosis are required to undergo further medical evaluation which may include retesting, chest x-ray, liver function tests, anti-tuberculin drug therapy, and/or other tests as indicated.

Detailed information on the Health Science Center’s proactive role in the screening and prevention of tuberculosis, policy on management of students with positive TB skin tests, management of students with active tuberculosis, and reporting of TB screening data is contained in the Student Guide.

Tetanus-Diphtheria
Proof of a tetanus-diphtheria toxoid immunization within the past ten years is required prior to registration.

Measles (Rubeola)
Prior to registration, all students must submit one of the following:

1) Signed physician’s record documenting measles illness.
   or
2) Signed physician’s record documenting two measles immunizations administered on or after the student’s first birthday and at least thirty days apart.
   or
3) Laboratory report of immune measles antibody titer.

**Mumps**
Prior to registration, all students must submit one of the following:
1) Signed physician’s record documenting mumps illness.
2) Signed physician’s record documenting mumps immunization on or after the student’s first birthday.
3) Laboratory report of immune mumps antibody titer.

**Rubella**
Prior to registration, all students must submit one of the following:
1) Signed physician’s record documenting rubella illness.
2) Signed physician’s record documenting rubella immunization on or after the student’s first birthday.
3) Laboratory report of immune rubella antibody titer.

The Board of Regents may require immunizations against additional diseases for some students. Further immunizations may be required by the Board of Regents in times of emergency or epidemic. The cost of all immunizations, other than Hepatitis B and TB skin testing, will be the responsibility of the student and/or dependent.

**Varicella**
Prior to Registration, all students must submit one of the following:
1) A signed physician’s record documenting chicken pox illness.
2) A signed physician’s record documenting two chicken pox immunizations administered on or after the student’s first birthday and at least thirty days apart.
3) Laboratory report of immune chicken pox antibody titer.

Students who arrive on campus without documentation of immunity will be required to receive the varicella vaccine prior to starting school. Payment for the vaccine and any follow-up charges are the responsibility of the student.

**AIDS/HIV/HBV Infection Policy**
The University of Texas Health Science Center at San Antonio recognizes its responsibility to protect the rights and privileges of students, faculty, and employees against contact with the spread of infectious diseases. In recognition of Human Immunodeficiency Virus (HIV) as a serious public health threat, UTHSCSA has adopted a policy and procedural steps to protect both the rights and well-being of those students who may be infected with HIV as well as to prevent the spread of HIV infection.

No individual with HIV infection will be discriminated against in employment, admission to academic programs, health benefits, or access to facilities. Students with HIV infection may attend all classes without restriction as long as they are physically and mentally able to participate and perform assigned work and pose no health risks to others. Any modification of the clinical training, working conditions, or privileges of HIV-infected students, faculty, staff, or employees will be determined on a case-by-case basis, taking into account the nature of the clinical activity, the technical expertise of the infected person, and the risks posed by HIV-infection, attendant functional disabilities, and the transmissibility of simultaneously carried infectious agents. The confidentiality of all information regarding the medical status of UTHSCSA faculty, staff, and students will be maintained in accordance with applicable statutes.

A complete copy of The University of Texas System Policy and Guidelines on Acquired Immune Deficiency Syndrome, Human Immunodeficiency Virus Infection, and Hepatitis B Virus can be found in the UTHSCSA Student Guide which is available from the Office of Student Services or online at http://studentservices.uthscsa.edu/Publications/student.html. This policy is applicable to all students of UTHSCSA as they pursue their academic (and clinical) endeavors.

**Sexual Assault Policy**
The policy of The University of Texas Health Science Center at San Antonio is to strive to maintain an environment that is free from intimidation and one in which students may be educated to their fullest potential. The Health Science Center fosters an understanding of difference and cultivates the ethical and moral issues that are the basis of a humane social order. The Health Science Center does not tolerate physical abuse, threats of violence, physical assault, or any form of sexual assault, including, but not limited to, acquaintance or date rape.

A student who individually, or in concert with others, participates or attempts to participate in a sexual offense, including, but not limited to, sexual assault or abuse of, threats against, or the unwanted touching of any other person, can be subject to disciplinary action by the Health Science Center, notwithstanding any action that may or may not be taken by the civil authorities. In addition to incidents that occur on The Health Science Center campus, the Health Science Center may take disciplinary action in response to incidents that take place during official functions of the UTHSCSA or those sponsored by registered student organizations or incidents that have “an affiliation” to the interests of The University of Texas Health Science Center at San Antonio, regardless of the location in which they occur.

Anyone who is a victim of any form of sexual assault should immediately call the police (911). The police will provide transportation to the University Hospital Emergency Center for medical treatment and evidence collection. Reporting an assault does not mean that the victim must press charges or take the case to criminal trial or a Health Science Center disciplinary hearing. Even if a victim has not decided whether to press charges,
informs the police and going to the hospital will allow for her/his emotional and medical needs to be attended to and will preserve the victim’s option to press charges. A student may file a written complaint against another student by directly contacting the Associate Vice President for Student Services or the appropriate associate dean for student affairs. The written complaint must be submitted within 30 working days of the alleged violation. The student may choose to file a complaint with the Associate Vice President for Student Services or with her/his associate dean for student affairs whether or not he/she chooses to press criminal charges. The Associate Vice President for Student Services shall immediately refer the complaint to the appropriate associate dean for student affairs. The student who files a complaint against a faculty or staff member may contact her/his associate dean for student affairs or the Associate Vice President for Student Services.

The written complaint and subsequent record of any administrative adjudication is confidential. This record is maintained in the office of the appropriate dean or the Associate Vice President for Academic Affairs, whoever conducted the administrative action.

The University of Texas Health Science Center at San Antonio Counseling Service (567-2648) and the Sexual Assault Crisis and Resource Center Hotline (349-7273) are available to provide support services for anyone affected by any form of sexual assault. Students who may have been assaulted by someone who is not affiliated with UTHSCSA may contact any of the available Health Science Center support services.

When a student reports that the campus regulations prohibiting sexual assault have been violated, certain provisions which provide for the protection of the emotional health and physical safety of the complainant can be made available. Such provisions may include modification of a student’s educational environment, (e.g., change in laboratory assignment or alteration of clinical schedule). Such modification will be facilitated through the associate dean for student affairs in the student’s respective school. If the complainant provides evidence that the accused student presents a continuing danger to person or property or poses an ongoing threat of disrupting the academic process, the associate dean for student affairs may take interim disciplinary action against the accused student as appropriate. Disciplinary action may include, but not be limited to, the following: verbal warning, written warning, counseling, suspension, or dismissal.

The UTHSCSA Student Guide outlines several educational and prevention programs and support services which address the issue of sexual assault.

Solicitation

Solicitation is defined as the sale or offer of sale of any product or service, whether for immediate or future delivery; the receipt or request for a gift or contribution; and the request that a vote be cast for an agent or candidate, issue, or proposition appearing on the ballot at any election held pursuant to state or federal law.

No solicitation, as defined above, shall be conducted on the campus of the Health Science Center with the following exceptions (as outlined in the Regents’ Rules and Regulations):

- Official activities of the Health Science Center itself or its contractors such as bookstores, cafeterias, and vending machines.
- Registered student organizations may collect membership fees and admission for events and similar activities, provided prior approval is obtained from the Director of Student Life and an accounting for such activities is made to the Director of Student Life.
- Major focus for fund-raising activities on the campus of The University of Texas Health Science Center at San Antonio should be to generate funds for Health Science Center programs and the State Employee Charitable Campaign. Requests by other off-campus, nonprofit (501c-3) organizations to conduct fund-raising activities must be forwarded to the Senior Vice President for External Affairs for review. Approval for such events will be given by the Health Science Center Executive Committee. (See the Handbook of Operating Procedures, Section 2.28, “Fund-Raising Activities.”)

Student Safety on Campus

The University Police Department is the agency responsible for law enforcement, security, and emergency response on the campus. A system of card-reader-controlled doors, emergency telephones and intercoms, exterior lighting, a closed-circuit television monitoring system, gated entry, late-entry doors for access to campus buildings, and police patrols are all part of the campus security program. Security awareness and crime prevention programs are provided to inform students and staff of security measures and devices in place, as well as services available through the University Police Department. The UTHSCSA Student Guide provides detailed information about all of these systems and programs.

Student Consumer Information

In addition to the information in Student Safety on Campus, information about campus security and crime statistics as outlined in Public Law 101-542, Student Right to Know and Campus Security Act, is contained in the UTHSCSA Student Guide and is available from the Office of Student Services.

Information on the graduation rate is available from the Registrar.

As provided for in Public Law No. 101-366, Americans with Disabilities Act (ADA), The University of Texas
Health Science Center at San Antonio will assist students with disabilities. (See “Office of Student Life.”)

**Student Debts**
The university is not responsible for debts contracted by individual students or by student organizations and will not assume the role of a collection agency or arbitrate disputes between students and creditors. It does, however, expect students and organizations to discharge contractual obligations.

**Student E-mail Accounts**
Every student is issued a university e-mail address and account at the time when the student first enrolls. As a standing university policy effective June 1, 2003, only the students’ university e-mail address shall be used for any electronic institutional communications of an official nature.

For help with your UTHSCSA e-mail account, see www.uthscsa.edu/computing or contact Triage (Computing Resources help desk) at 567-2069. **If you wish to have your e-mail delivered off-campus**, you must come to the Triage office (MED 436.L) with an official picture ID and ask to have your e-mail forwarded. You will need to know the exact spelling of your forwarding address. Alternatively, you can send triage@uthscsa.edu e-mail from your UTHSCSA account, requesting e-mail forwarding—be sure to include the complete forwarding address. The e-mail routing change takes effect overnight.

Once this routing is requested, it is the student’s responsibility to notify Triage of any changes. Do not assume delivery changes have occurred unless you receive an e-mail reply from Triage to that effect.

**Student Papers**
Research papers and theses authored by students will be made available to the public.

**UTHSCSA Student Guide**
The full texts of several Health Science Center and UT System policies, which all students are responsible for knowing, are contained in the UTHSCSA Student Guide (http://studentservices.uthscsa.edu/publications/student.html). Additional information about the policies, procedures, regulations, and guidelines printed in the UTHSCSA Catalog also are included in the Student Guide.

Among the topics in the **Student Guide** are:
- Student Conduct and Discipline
- AIDS/HIV and Hepatitis B
- Substance Abuse
- Sexual Harassment
- Family Educational Rights and Privacy Act
- Campus Security and Crime Statistics
- Student Role in Decision Making
- Due Process
- Official Notification (what constitutes)
- Student Debts Policy
- Guidelines for Professional Conduct
- Personal Emergency Notification Procedures
- Financial Aid Rights and Responsibilities
- Change of Address Procedures
- Professional Liability Insurance Requirements
- Immunizations and Tuberculosis Screening
- Graduation Procedures
- Clearance Procedures (withdrawal and graduation)
- Posting of Grades Policy
- Student Publications
- Guidelines for Animal Use
- Guidelines for Clinical Attire
- Student Employment

**Student Travel Policy**
Texas Education Code Section 51.949 requires all state institutions adopt rules and regulations governing student travel as defined below:

The trip is undertaken by one or more currently enrolled students to reach an activity or event that meets all of the following criteria:

1) An activity or event organized and sponsored by UTHSCSA. (The event shall be planned and funded by the institution and approved by a designated administrator.)

2) The activity or event is located more than 25 miles from UTHSCSA campuses.

3) Travel to the activity or event is funded and undertaken using a vehicle owned or leased by UTHSCSA; or attendance at the activity or event is required by a registered student organization and has prior written approval by the appropriate institutional officer.

UTHSCSA does not plan, fund, or sponsor any school-related activity for students, using university-owned or leased vehicles, on sites more than 25 miles from its campuses.

UTHSCSA, however, encourages all students to observe the following guidelines when traveling away from campuses:

4) All occupants of motor vehicles shall use seat belts or other approved safety restraint devices required by law or regulation at all times when the vehicle is in operation.

5) All occupants of motor vehicles shall not consume, possess, or transport any alcoholic beverages or illegal substances.

6) The total number of passengers in any vehicle at any time it is in operation shall not exceed the manufacturer’s recommended capacity or the number specified in applicable federal or state law or regulations, whichever is lower. In addition, when the luggage load is excessive, it is highly recommended the passenger load be reduced accordingly.
7) All operators of motor vehicles shall have valid operators’ licenses and be trained as required by law to drive the vehicles.

8) All motor vehicles must have current proofs of liability insurance coverage and state inspection certification, be equipped with all safety devices or equipment required by federal or state law or regulation, and comply with all other applicable requirements of federal or state law or regulations.

9) Operators of motor vehicles shall comply with all laws, regulations, and posted signs regarding speed and traffic control and shall not operate the vehicle for a continuous period that is longer than the maximum provided by federal or state law or regulations or guidelines promulgated by UTHSCSA, whichever is lower, without scheduled rest stops or overnight stops.

10) When and if UTHSCSA rents cars for students to travel, all applicable requirements of the state contracts for rental cars and the Texas System Business Procedure Memoranda apply.

11) When traveling by common carriers, observe the carrier’s safety guidelines.
Admissions Requirements and Application Procedures

Detailed information about admission requirements and application procedures is provided in the Viewbook of each school (http://studentservices.uthscsa.edu/publications/Publicat.html). The Viewbooks are official publications of the Health Science Center and supplements to this Catalog.

Requests for admissions information are processed by the Office of the Registrar. The following admissions offices are the sources of Applicant Viewbooks:

- Allied Health Sciences Admissions
- Dental Admissions
- Medical Admissions
- Graduate Admissions
- Nursing Admissions

UTHSCSA Office of the Registrar
Mail Code 7702
7703 Floyd Curl Dr.
San Antonio TX 78229-3900

Guidelines for Student Admission Selection

Student Admissions Committees throughout UTHSCSA may consider any of the following elements in the selection of students. The specific elements to be used and the weight applied to each element in the selection of an applicant are the prerogative of the admissions committee of each school or program. It has been clearly documented and widely understood that admissions processes emphasizing performance of applicants on standardized test scores and grade point averages alone do not necessarily result in the admission of a diverse student body. Elements that may be included in consideration of applicants:

- applicant’s goals for future (written personal statement or at interview)
- awards and honors for academic achievement
- awards and honors of distinction for humanitarian service
- awards and honors for public speaking and communication skills
- bilingual language ability
- commitment/desire to serve in a medically underserved region of the state following graduation (written personal statement or at interview)
- educational attainment of the applicant’s family
- employment history, especially as it occurred simultaneously with undergraduate academic preparation
- extracurricular activities
- GPA and standard test scores
- hometown or county of residence is from medically underserved and/or health professional shortage areas, with particular emphasis on South Texas
- leadership potential
- personal interview
- prior experience in providing health care related services
- prior military service with training and experience in health care related area
- public/community service volunteer activities
- reference letters or recommendations
- research accomplishments
- socioeconomic history (educationally and/or economically disadvantaged)
- successful experience in overcoming adverse personal, family, or life conditions/experiences
- successful graduation from another nationally accredited health care related curriculum. (For example, a respiratory therapist might apply for admission to medical school, or a dental hygienist for admission to dental school, or a surgical technician might apply for admission to nursing school, an Emergency Medical Technician may potentially apply to Physician’s Assistant program, medical school, nursing school, etc.)
- Texas resident, or permanent Texas resident alien
- volunteer activities in health care related areas

An applicant’s performance on a standardized test may not be used in the admissions or competitive scholarship process for a graduate or professional program as the sole criterion for consideration of the applicant or as the primary criterion to end consideration of the applicant. If an applicant’s performance on a standardized test is used in the admissions or competitive scholarship process, the applicant’s performance must also be used to compare the applicant’s test score with those of other applicants from similar socioeconomic backgrounds to the extent that those backgrounds can be properly determined and identified based on information provided in the institution’s admissions or competitive scholarship process. This does not apply to a standardized test used to measure the English language proficiency of a student who is a graduate of a foreign institution of higher education.

The university may not assign a specific weight to any one factor being considered in the admissions or competitive scholarship process for a graduate or professional program. The state of Texas provides financial support to residents of Texas for educational opportunities; therefore admission of applicants to schools/programs within the UTHSCSA should encourage admission of Texas residents and permanent Texas resident aliens.
Scholarship Awards Policy

Twice annually, or as appropriate, the director of financial aid will submit scholarship information to the respective associate dean for student affairs. The following data will be supplied to each associate dean:

1. Name of the scholarship fund
2. Current amount available to be awarded
3. Award criteria and whether or not financial need is a consideration

Each school determines the selection method for making scholarship awards. A school may consider any of the elements contained within the UTHSCSA Guidelines for Student Admission in awarding scholarships. Each school will identify the specific elements that will be used in awarding scholarships. Continuation of scholarship(s) is dependent upon academic performance. Recommendations for awards from the dean will be forwarded to the director of financial aid and the chairperson of the UTHSCSA Loan and Scholarship Committee for approval at the next committee meeting.

Awards will be presented to the recipients at the appropriate times as determined by the respective associate deans and the director of financial aid. No scholarship dollars will be awarded to recipients without approval of the Committee.

Regarding Competitive Scholarships at UTHSCSA

Each school determines the criteria and methods for students to apply for competitive scholarships to be awarded from school-related scholarship funds. Criteria are submitted to the UTHSCSA Loan and Scholarship Committee for approval. All awards must comply with the rules and regulations for residence status of the Texas Higher Education Coordinating Board and be approved by the UTHSCSA Loan and Scholarship Committee. The time frame for making these awards varies according to the admission and matriculation cycle for the individual school.

“Fresh Start” Admission

An applicant for admission who is a Texas resident may seek to enter this institution pursuant to the state’s “academic fresh start” statute, Texas Education Code 51.931. When the applicant informs the admissions office in writing of her or his election under the statute, the institution will not consider in the admissions decision any academic course credits or grades earned by the applicant 10 or more years prior to the starting date of the semester in which the applicant seeks to enroll. An applicant who makes the election to apply under this statute and is admitted as a student may not receive any course credit for courses taken 10 or more years prior to enrollment under academic fresh start.

An applicant who has earned a baccalaureate degree under the “academic fresh start” statute, Texas Education Code, Section 51.931, and applies for admission to a post-graduate or professional program, will be evaluated only on the grade point average of the course of work completed for that baccalaureate degree and the other criteria stated herein for admission to the post-graduate or professional program.

TASP Test Requirement

Undergraduate students are required to take the Texas Academic Skills Program (TASP) test prior to the accumulation of nine of more semester credit hours.* Although this test is not a part of admission considerations, the Health Science Center cannot award a certificate or diploma to a student who has not passed all sections of the test.

*This requirement does not apply to:

• individuals who accumulated three or more semester credit hours of nonremedial college work prior to the fall semester of 1989 nor to students who hold a baccalaureate degree;

• transfer students who have earned a “B” or better in transfer freshman-level courses designated by the Texas Coordinating Board in reading, writing, and math;

• students with a GPA of 3.5 on a 4.0 scale on an advanced high school curriculum from a public or accredited private school who enroll within 2 years of the date of graduation from high school.

Limit of validity: A TASP score will not be accepted if it is more than five years old.

Registration

Official registration is conducted on the date specified in the academic calendar of each school. A nonrefundable late registration fee of $25 is assessed individuals who register after the close of official registration.

No student may attend class, laboratory, or clinic until he or she is officially registered with tuition and fees (or an installment payment) paid.

If the curriculum of a program requires that a student take courses at both UTHSCSA and another institution concurrently, the student must register and pay tuition and fees at both institutions to be considered an enrolled student.

The University of Texas Health Science Center at San Antonio requires that a student be registered for the semester or summer session in which he or she graduates. A student who expects to graduate in a semester when he or she will not be enrolled in courses at UTHSCSA must register in absentia for the purpose of having the degree conferred.

Special Student Status

Individuals who wish to enroll in courses presented in programs of the Graduate School of Biomedical Sciences, School of Nursing, or the School of Allied Health Sciences without entering a degree program may apply as a non-degree Special Student under circumstances prescribed by those schools.
Residence Classification

Residence status is determined by statutory provisions of the Texas Education Code and Rules and Regulations of the Texas Higher Education Coordinating Board. Generally, individuals must have resided in the state for 12 months immediately preceding enrollment to be eligible to be classified as residents. Such individuals, if dependent, must have resided with their parent(s) or guardian(s) in the state for 12 months immediately preceding enrollment.

A nonresident classification is presumed to be correct as long as the residence of the individual in the state is primarily for the purpose of attending an educational institution.

Applicants whose residence status is not clearly established may request a “Residence Questionnaire” (available from the Registrar’s Office) so that a university opinion may be rendered in advance of the student’s initial registration. The university may request that a student claiming Texas residency for tuition purposes complete a Residence Questionnaire and provide substantiating documents to affirm Texas residency.

Certain classifications of nonresidents may qualify to pay tuition at the resident rate without regard to length of residence in the state. (See “Financial Information.”)

Oath of Residency

Applicants sign an oath on the Application for Admission that attests to the truth and accuracy of information provided in that application which is used to determine residency. The submission of false information is grounds for rejection of the application, withdrawal of any offer of acceptance, cancellation of enrollment, or appropriate disciplinary action.

Sec. 54.0521, Texas Education Code, provides for an oath of residency. The student is responsible for registering under the proper residence classification and for providing documentation as required by the public institution of higher education. If there is any question as to right to classification as a resident of Texas it is the student’s obligation, prior to or at the time of enrollment, to raise the question with the administrative officials of the institution in which he or she is enrolling for official determination. Students classified as Texas residents must affirm the correctness of that classification as a part of the admission procedure. If the student’s classification as a resident becomes inappropriate for any reason, it is the responsibility of the student to notify the proper administrative officials at the institution. Failure to notify the institution constitutes a violation of the oath of residency and may result in disciplinary action and/or other penalties.

Transfer of Credit

Credit for semester hours of work completed at another institution toward prerequisites for admission or in lieu of UTHSCSA requirements must be approved by the faculty of the specific program to which the individual is applying. Official transcripts must accompany any request for transfer of credit.

The following procedures shall be followed by The University of Texas Health Science Center at San Antonio, in accordance with the policies of the Texas Higher Education Coordinating Board, in the resolution of credit transfer disputes involving lower-division courses:

1. If an institution of higher education does not accept course credit earned by a student at another institution of higher education, the receiving institution shall give written notice to the student and to the sending institution that transfer of the course credit is denied.

2. The two institutions and the student shall attempt to resolve the transfer of the course credit in accordance with Board rules and/or guidelines.

3. If the transfer dispute is not resolved to the satisfaction of the student or the sending institution within 45 days after the date the student received written notice of denial, the institution whose credit is denied for transfer shall notify the Commissioner of the denial.

The Commissioner of Higher Education or the commissioner’s designee shall make the final determination about the dispute concerning the transfer of course credit and give written notice of the determination to the involved student and institutions.

Adding/Dropping Courses

The process of adding or dropping courses, if such procedures are compatible with the structure of the educational program, is accomplished through the individuals (program directors, instructors, associate deans) designated by the school. Tuition and fees are adjusted, if appropriate, when the Registrar’s Office receives documentation from the school.

Attendance

Attendance policies are the prerogative of the faculty of each school.

Withdrawal

Withdrawal refers to the process whereby students remove themselves from all classes in which they are enrolled. To officially withdraw from the Health Science Center, a student follows procedures established by the school in which he or she is enrolled. “Completion of a Clearance Form” and an exit interview for students who are receiving financial aid are part of this process.

Leave of Absence

Generally, a leave of absence for a maximum of one year may be granted to a student in good standing by the school in which he or she is enrolled. In some cases, the school may extend the leave, depending upon extenuating circumstances. It is the responsibility of the student to initiate a request for a leave of absence, following the procedure established by the school. Policies for each school are contained in the UTHSCSA Student Guide.
Grades, Promotion, and Advancement

Grading standards, symbols, grade point scales, GPA determinations, and other considerations regarding the quality of work of students are the prerogative of the faculty of the programs, as are issues of promotion and advancement.

Probation

Students are subject to being placed on either academic or administrative probation according to the policies of the school in which they are enrolled and/or the Procedures and Regulations Governing Student Conduct and Discipline of the Health Science Center. (See “General Regulations and Requirements.”)

Dismissal

Students may be dismissed, suspended, dropped from the rolls, and refused readmission at any time if circumstances of a legal, moral, health, social, or academic nature are considered to justify such action.

In addition to dismissal due to academic deficiencies, questions of scholastic dishonesty and other infractions of the Rules and Regulations of the Board of Regents of The University of Texas System or the “Procedures and Regulations Governing Student Conduct and Discipline” of the Health Science Center may be grounds for dismissal. Taking a leave of absence without permission, failing to return at the appointed time from a leave of absence, and failure to pay tuition and fees may lead to a student’s termination. (See “General Regulations and Requirements.”)

Readmission

In general, an application for readmission by a student who has previously withdrawn is subject to the same requirements, procedures, and acceptance considerations that apply to first-time applicants. Individuals who have completed the first year of a program may be readmitted, at the discretion of the faculty, on a space-available basis.

Graduation

The certificate or degree is awarded by the Board of Regents following the student’s completion of a prescribed course of study, the recommendation of the faculty, and the certification by the dean of the school and the president of The University of Texas Health Science Center at San Antonio that the candidate has fulfilled all requirements for the certificate or degree.

Degrees are conferred and certificates awarded only on official dates publicly announced.

It is the responsibility of the candidate to file an Application for Degree/Certificate form in the Registrar’s Office in the semester prior to anticipated graduation or at registration for the final academic year.

As in any educational setting, the student has the primary responsibility for acquiring knowledge. In offering courses of study, the Health Science Center in no way guarantees that any student accepted for enrollment will achieve any given level of academic or professional accomplishment.

General and specific requirements for degrees may be altered in successive Catalogs. A student is bound by the requirements of the Catalog in force at the time of her/his admission; however, a student must complete all requirements within six years or be subject to degree requirements of subsequent Catalogs. The student who is required to or chooses to fulfill the requirements of a subsequent Catalog must have her/his amended degree plan approved by the appropriate dean.
Tuition and Fees
Registration is not complete until tuition and fees are paid. Students should be prepared to make these payments or arrange for installments prior to the first class day of the enrollment period. A late registration fee of $25 is assessed students who register after the close of official registration. Both tuition and fees are subject to change by legislative or regental action and become effective when enacted.

Students in the Professional Schools (Medical School and Dental School) pay tuition and fees based upon the curriculum for the academic year. Both Undergraduate and Graduate students (Graduate School of Biomedical Sciences, School of Allied Health Sciences, and School of Nursing) pay tuition and fees based upon the hours for which they register each semester.

Residence Determination
The Registrar’s Office is responsible for determining residence status of students for purposes of tuition. The office is guided by the Texas Education Code, §54.052, et seq. and the Rules and Regulations for Determining Residence Status of the Texas Higher Education Coordinating Board, and university regulations. Under the state statutes and regulations a student or prospective student is classified as a resident of Texas, nonresident, or a foreign student.

A resident is an individual who is either a U.S. citizen, national or Permanent Resident Alien, an alien who has been permitted by Congress to adopt the U.S. as her or his domicile while in the United States and who has otherwise met the state requirements for establishing residency for tuition purposes; or an individual who has lived in the state for a specified period of time; resided with a parent or guardian while attending high school in this state; graduated from a high school in this state, resided in this state for at least 3 years as of that graduation; and provided an affidavit regarding establishment of permanent residency. A nonresident is a citizen, national or permanent resident of the U.S. or an alien who has been permitted by Congress to adopt the U.S. as her or his domicile while in this country and who has not met the State’s requirement for establishing residency for tuition purposes. While these state requirements for establishing residency are complex and should be referred to in each particular circumstance, they generally require a minimum of 12 months residence in Texas prior to enrollment. A foreign student is an alien who is not a permanent resident of the U.S. or has not been permitted by Congress to adopt the U.S. as her or his domicile. An individual classified as a nonresident or foreign student may qualify, under certain exceptions specified in these rules, for resident tuition rates and other charges while continuing to be classified as a nonresident or a foreign student. For information on tuition exceptions and waivers see “Tuition and Fee Exemption” later in this section.

Professional School Tuition

| Dental School | Residents | $5,400 per academic year |
| Nonresidents | $16,200 per academic year (or 3x the rate for residents) |
| Medical School | Residents | $6,550 per academic year |
| Nonresidents | $19,650 per academic year (or 3x the rate for residents) |

All medical and dental students pay a $1,500 Designated Tuition fee.

Students who enroll for less than one semester are charged tuition on a prorated basis.

Graduate and Undergraduate Tuition
Tuition currently is $44 per semester credit hour. A fee of $40 per semester credit hour (Designated Tuition) is also charged.

| Tuition | 2003–2004 | $46 per semester credit hour |
| 2004–2005 | $48 per semester credit hour |
| 2005–2006 | $50 per semester credit hour |

Nonresidents pay an amount per semester credit hour equal to the “cost of education,” a figure determined annually by the Texas Higher Education Coordinating Board. Currently, nonresident tuition is $282 per semester credit hour. A fee of $40 per semester credit hour (Designated Tuition) is also charged.

Tuition for Joint Programs
Students in Clinical Laboratory Sciences joint program with The University of Texas at San Antonio may pay tuition and fees at both UTHSCSA and UTSA during some portions of the program. Tuition rates are the same at both institutions, and students who register at both institutions pay no more tuition than they would if they registered at a single institution.

Installment Payments
Payment of tuition and fees in installments is an option for students. The following alternatives are available:

Medical and Dental Students*

| Option 1 | 25% at Registration |
| 25% 8 weeks later |
| 25% 1 week after the midpoint of the academic year |

*Recipients of HEAL loans may not be able to use this option.
25% 30 days after the 3rd installment
**Option 2**
50% at Registration
50% 1 week after the midpoint of the academic year

**Graduate and Undergraduate Students**
(1) one-half payment of tuition and fees in advance of the beginning of the semester (registration) and
(2) one-fourth payments prior to the sixth and eleventh class weeks

**All Students**
A fee of $15 will be assessed for handling of installment payments of tuition and fees, and a $10 fee will be assessed for each late payment.

Late payments will result, at the University’s option, in one or more of the following actions:
(a) the student’s barring from class until payment is made;
(b) withholding of credit if payment is not made by the end of the semester, with the University adjusting records to reflect the student’s failure to have properly enrolled for that semester;
(c) bar against readmission and withholding of grades, degree, and official transcript; or
(d) other remedies authorized by law.

**Classification for Tuition Purposes**
Nonresidents who may qualify to pay tuition at the resident rate without regard to the length of residence in Texas include:
(1) Military personnel assigned to duty in Texas and their spouse and children;
(2) Faculty employed at least one-half time on a regular monthly basis at a state institution of higher learning and their spouse and children;
(3) Teaching or research assistants employed at least one-half time in a position which is related to the assistant’s degree program under academic regulations and their spouse and children;
(4) A student who holds a competitive academic scholarship for at least $1,000 which was awarded in competition with Texas students by a scholarship committee recognized by the University and the Texas Higher Education Coordinating Board. The total number of students at an institution paying resident tuition under this provision for a particular semester may not exceed five percent (5%) of the total number of students registered at the institution for the same semester of the preceding year.

**Required Fees**
The following required fees, with the exception of the Identification Fee, Professional Liability Insurance premiums, Human Materials Fee, and the Late Registration Fee, are refundable according to the schedule of refunds outlined later in this section.

The **Student Services Fee** covers the cost of student services. This fee is required of all students. **Medical** and **Dental** students are assessed $220 per academic year.

**Allied Health, Graduate**, and **Nursing** students are assessed $7.50 per semester credit hour, not to exceed $90 per semester or $40 per summer session—$220 maximum per academic year.

A **Library Fee** of $25 per semester will be assessed students in the Graduate School of Biomedical Sciences, School of Allied Health Sciences, and School of Nursing. Dental and Medical students will be assessed $50 per year.

An **Identification Fee** of $10, payable upon registration, is for a student identification card. This fee is not refundable and is required of all students. A fee of $10 will be charged for a replacement card.

A **Graduation Fee** of $60 is paid at the time of registration for the semester or summer session in which the student plans to graduate. The fee covers the cost of the diploma and its related expenses.

A **Microscope Fee** is prorated on a monthly basis ($4 per month) not to exceed $48 per year and is assessed students in courses requiring a microscope. Maintenance is provided by the University. All MS1, MS2, and DS1 students pay $48 per year.

**Laboratory Fees** are assessed to defray the cost of materials and supplies provided in the teaching programs. These fees are based primarily upon the amount of laboratory use each year of a program. The maximum fee is $30 per laboratory course per semester. This fee does not include breakage.

A **Human Materials Fee** of $300 is assessed for any student enrolling in a Gross Anatomy course. This fee is nonrefundable.

An **Audit Fee** of $5 per course is charged (a) HSC students who are not registered for credit in other courses in that semester or session, and (b) HSC employees. Other individuals are charged $10 per course to audit.

Students who are enrolled less than full-time in nursing courses may audit additional nursing courses for a fee of $5 per course. Individuals who are not enrolled in nursing courses may audit nursing courses for a fee of $25 per course. Students must have permission of the instructor to audit a course.

A **Late Registration Fee** of $25 will be assessed students who register after the close of the official registration period. The fee is not refundable.

A **Microfilming Fee** of $55, covering the cost of microfilming the Ph.D. dissertation and publication of the abstract in *Dissertation Abstracts International*, is paid when the dissertation is completed. Master’s theses may also be microfilmed for a $45 fee, with the same provisions. The student will be responsible for all costs related to mailing their dissertations/theses and accompanying paperwork to Bell and Howell to be microfilmed. Consult with the Graduate Dean’s Office for detailed information.

The student who expects to defend the dissertation or thesis in this interval should preregister for one credit
hour for the next semester. Following the successful defense of the dissertation, the student may submit an add/drop card and register in absentia for the coming semester. Registration in absentia should be designated as zero credit hours on the course card. The fee for in absentia registration is $25.00.

A Clinical Usage Fee of $350 per year is assessed second-year Dental School students; $500 for DS3s; and $500 for DS4s.

An annual Instrument Leasing Fee is assessed Dental School students according to the following schedule:

<table>
<thead>
<tr>
<th>Level</th>
<th>Current</th>
<th>Effective Fall 2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>DS1</td>
<td>$1,400</td>
<td>$2,000</td>
</tr>
<tr>
<td>DS2</td>
<td>$1,400</td>
<td>$2,000</td>
</tr>
<tr>
<td>DS3</td>
<td>$1,200</td>
<td>$1,800</td>
</tr>
<tr>
<td>DS4</td>
<td>$1,200</td>
<td>$1,800</td>
</tr>
</tbody>
</table>

An Implantology Fee of $500 per year is assessed second-year Dental School students.

A Medical Service Fee is assessed all students. The semester rate is $55, summer rate $25, and annual rate $135.

A Laptop Fee of $5,600 is assessed all DS1 students.

A Criminal Background Check Fee of $5.00 per year is assessed dental students who participate in clinical rotations to provide patient care at off-campus locations.

A Technical Clinical Skills Fee of $400 per semester is assessed all medical students. (MS4s will not be assessed the fee in the 2003–2004 academic year.)

Allied Health students are assessed a Student Assistance Fee of $25 per semester for full-time students and $15 per semester for part-time students.

A Practicum Fee of $5.00 per credit hour for each practicum course is assessed allied health students.

A Technology Fee of $2,100 is assessed all DS2, DS3, and DS4 students.

Medical students are assessed a Computer-Use Fee of $50 per year. All Nursing students are assessed a Computer-Use Fee of $5.00 per semester credit hour up to $50 per semester.

Each semester Dental Hygiene Certificate students are charged an Equipment Rental Fee of $320.

The following Leasing Fees will be charged to Dental Laboratory Technology students:

- Dental Lab Technology Leasing Fee Level 1 .......... $1,650
- Dental Lab Technology Leasing Fee Level 2 .......... $1,000
- Dental Lab Technology Leasing Fee Level 3 .......... $650
- Dental Lab Technology Leasing Fee Level 4 .......... $650

Other Expenses

A Parking Fee varying from $48 to $480 is assessed to students who park vehicles on campus. The amount of the fee varies depending on the location of the space chosen by the student.

Professional Liability Insurance. Students enrolled in a health component institution of The University of Texas System in a program that involves direct patient care activities are required to purchase professional liability insurance through the University as a prerequisite to enrollment. The policy extends coverage to the insured only in her or his student role. Current premiums for students in the various programs are:

- Medical students .................................. $25 per year
- Dental students .................................. $30 per year
- Nursing students ................................. $14.50 per year
- All Nurse Practitioner students .............. $61 per year
- Allied Health students* ....................... $14.50 per year
- Physician Assistant students ............... $61.00 per year
- All EMT except bachelor’s students ...... $61.00 per year

Challenge Examination Fees are $10 for each lecture examination and $15 for each laboratory course exam.

Computer Adaptive Test (Nursing) fee is $38.

Student Health Insurance is available through a group plan designed for students at UTHSCSA. A student may enroll her or his spouse and/or children at an additional cost. The premiums vary accordingly. All students are required to have health insurance. The current (Jan. 2003) annual premium for a single student is $715.

Nonrefundable Application Fees ranging from $10 to $40 are required by each school at the time the application is submitted to the Office of the Registrar. Fees vary and are listed for applicants in UTHSCSA Applicant Viewbooks and printed on the application forms. Medical and dental application fees (payable to Texas Medical and Dental Schools Application Service) are $55 for residents and $90 for nonresidents.

Visiting Medical Students $25/course
AADAS Supplemental Application (Dental) $40

Program-specific expenses, including costs of textbooks, equipment, uniforms, manuals, instruments, specialty and licensing examination fees, and costs associated with clinical experiences and fieldwork are provided in individual school sections of this Catalog.

Living expenses (housing, meals, transportation, etc.) vary according to the individual choices of the student.

A $165.50 per semester credit hour Out-of-State Instructional Fee is charged to all non-resident students who live outside of Texas while they are taking a distance education course. Regular tuition will not be charged for these courses.

Tuition and fees are subject to change by legislative or regental action and become effective on the date enacted. The Texas Legislature does not set the specific amount for

* Dental Laboratory Technology students are not required to purchase liability insurance.
any particular fee. The student fees assessed above are authorized by state statute; however, the specific fee amounts and the determination to increase fees are made by the university administration and The University of Texas System Board of Regents.

**Tuition and Fee Exemption**

Foster care or other residential care students. The Texas Education Code, Section 54.211, provides an exemption program for tuition and some fees for students who were in foster care or other residential care under the conservatorship of the Department of Protective and Regulatory Services on or after the day preceding an eligible student’s 18th birthday. To receive the exemption, an otherwise eligible student must enroll in an institution of higher education not later than the third anniversary of the date the student was discharged from the foster or other residential care. Eligible students should provide documentation from the Department of Protective and Regulatory Services, which certifies their eligibility for tuition and fee exemption, to the Director of Student Financial Aid.

Blind or deaf students. The Texas Education Code, Section 54.205, provides that blind or deaf students shall be exempt from the payment of tuition and all fees at public institutions of higher education in Texas. Such persons are not exempt from charges for books or supplies for which other students normally pay. Eligible students must:

1. be a resident of Texas as defined by Coordinating Board rules;
2. be a high school graduate or its equivalent (GED);
3. present a certificate, indicating that he/she is blind or a deaf person, issued by the Texas Rehabilitation Commission, the Texas Commission for the Blind, or the Texas Commission for the Deaf and Hearing Impaired, as appropriate. The certificate is required for initial enrollment only and remains valid for subsequent enrollments at the institution in the student’s designated course of study;
4. present a letter of recommendation from the principal of the high school attended or from a public official or some other responsible person who knows the blind or deaf person;
5. present a statement written by the blind or deaf person which sets out that person’s purpose in pursuing higher education and which indicates the certificate or degree program to be pursued or the professional enhancement anticipated from the course of study for that certificate or degree program;
6. provide proof that he/she meets the institution’s entrance requirements. An institution may establish special entrance requirements to fit the circumstances of deaf and/or blind persons.

AFDC students. Section 54.212 of the Texas Education Code states that a student is exempt from the payment of tuition and fees authorized by this chapter for the first academic year in which the student enrolls at an institution of higher education if the student:

1. graduated from a public high school in this state;
2. successfully completed the attendance requirements under Sections 21.032;
3. during the student’s last year of public high school in this state, was a dependent child receiving financial assistance under Chapter 31, Human Resources Code, for not less than six months;
4. is younger than 22 years of age on the date of enrollment;
5. has met the entrance examination requirements of the institution before the date of enrollment; and
6. is classified as a resident under Subchapter B.

Veterans. Section 54.203 (Hazelwood Act) of the Texas Education Code provides exemption from the payment of tuition and most fees to eligible Texas veterans or the children of certain deceased veterans. Benefits under the act are limited to otherwise eligible students whose “right to benefits under legislation is extinguished at the time of his (her) registration.” Receipt of a Federal Pell Grant or a Supplemental Educational Opportunity Grant, as well as Veteran’s Administration benefits is therefore disqualifying (maximum 150 credit hours).

Texas ex-servicemen (Section 54.203) may, as directed by the State Legislature, be exempted from certain required fees but not deposits when meeting these criteria (maximum 150 credit hours):

1. has resided in Texas for a period of not less than 6 months before the date of registration;
2. was a “bona fide” legal resident of the state at the time of entering service;
3. served in the armed forces or in certain auxiliary services in World War II, the Korean conflict, or the Cold War;
4. was honorably discharged therefrom (except those discharged because of being over the age of thirty-eight or because of personal request);
5. is not eligible for education benefits provided for veterans by the United States Government.

Children of members of the armed forces (Section 54.203). Exemption from payment of certain fees also extends to children of members of the armed forces killed in action or who died while in the service during World War II, the Korean conflict, or the Cold War, and to orphans of members of the Texas National Guard and the Texas Air National Guard killed since January 1, 1946, while on active duty. Application for this exemption should be made to the Registrar (maximum 150 credit hours).

Children of certain disabled public employees (full-paid or volunteer firefighter; or a full-paid municipal, county, or state peace officer; or a custodial employee of the Texas Department of Corrections; or a game warden) who in the line of duty have suffered injury resulting
in death or disability, are exempt from payment of tuition and laboratory fees (Section 54.204). For specific information relative to this provision, contact the Commissioner of Higher Education, Sam Houston State Office Building, Austin, Texas 78701 (120 hours undergraduate maximum).

Surviving spouse and minor children of certain police, security, or emergency personnel killed in the line of duty (Texas Government Code 615.0225). Exemption from payment of certain fees extends to the surviving spouse or children of certain public peace officers, probation officers, parole officers, jailers, police reservists, firefighters, and emergency medical personnel whose death occurred in the line of duty as a result of risk inherent in the duty (not to exceed bachelor’s degree or 200 hours maximum and enrolled full time).

Accredited School Scholarship*  
(Section 54.203) The governing board of each institution of higher education may issue scholarships each year to the highest ranking graduate of each accredited high school of this state, exempting the graduates from the payment of tuition during both semesters of the first regular session immediately following their graduation. This exemption may be granted for any one of the first four regular sessions following the individual’s graduation from high school when in the opinion of the institution’s president the circumstances of an individual case, including military service, merit the action.

Good Neighbor Scholarship*  
A select number of native-born students from the other nations of the American hemisphere; native-born students from a Latin American country, and students from each nation, as authorized in Subsection (a)(1) of Section 54.207, shall be exempt from tuition as provided in this subsection.

Every applicant shall furnish satisfactory evidence, certified by the proper authority of his native country, that he/she is a bona fide native-born citizen and resident of the country which certifies her/his application and that he/she is scholastically qualified for admission.

Academic Common Market  
(a) The Texas Higher Education Coordinating Board is hereby authorized to participate on behalf of the State of Texas in the interstate agreement known as the “Academic Common Market,” which provides reciprocal higher educational opportunities to the citizens of states declared as parties to the Southern Regional Education Compact.

(b) The governing board of any public institution of higher education may propose programs and curricula for approval by the Texas Higher Education Coordinating Board which are to be offered to citizens of participating states on a resident tuition or registration fee basis.

(c) Notwithstanding any other provisions of this code, the governing board of any public institution of higher education shall charge nonresident students from participating states enrolled in programs designated pursuant to this section the same amount charged resident students in such programs.

Educational Aides  
The governing board of an institution of higher education shall exempt an eligible educational aide from the payment of tuition and fees, other than class or laboratory fees.

To be eligible for an exemption under this section, a person must:
(1) be a resident of this state;
(2) be certified as an educational aide by the State Board for Educator Certification;
(3) have at least two school years of experience as a certified educational aide working directly with students in a school district;
(4) be employed as a certified educational aide working directly with students in a school district during the entire term or semester for which the person receives the exemption;
(5) establish financial need as determined by the Texas Higher Education Coordinating Board rule;
(6) be enrolled in classes necessary for certification as a teacher at the institution of higher education granting the exemption;
(7) maintain an acceptable grade point average as determined by Coordinating Board rule; and
(8) comply with any other requirements adopted by the Coordinating Board under this section.

The Coordinating Board must certify a person’s eligibility to receive an exemption under this section. As soon as practicable after receiving an application for certification, the Coordinating Board shall make the determination of eligibility and give notice of its determination to the applicant, the institution of higher education at which the applicant is enrolled, and the school district employing the person as an educational aide.

The Coordinating Board shall adopt rules consistent with this section as necessary to implement this section. The Coordinating Board shall distribute a copy of the rules adopted under this section to each school district and institution of higher education in this state.

Title IV Refund  
This refund policy will apply to most financial aid recipients who withdraw.

As an institution participating in programs under Title IV of the Higher Education Act of 1965, as amended (“Act”), UTHSCSA is required to refund unearned tuition, fees, room and board, and other charges to students who have received a grant, loan, or work assistance under Title IV of the Act or whose parents have received a loan on their
Return of Federal Funds Due to Withdrawal or Leave of Absence

Students withdrawing from UTHSCSA prior to completing 60% of the semester, and who have received Federal Title IV are required to return the unearned portion of funds received. Funds used to pay tuition and fees are returned by UTHSCSA to the appropriate federal fund on a pro rata basis. Thus a student on financial aid who withdraws after completing only 30% of the semester will have 70% returned to federal programs. This is NOT a refund of tuition and fees. State law describes the amount of tuition and fees that a student is responsible for paying regardless of when they withdrew. Refer to the “Fee Refund Schedule” below for details on tuition and fee refunds for drops and withdrawals. Student who are granted a leave of absence over 180 days are considered withdrawn as it relates to financial aid.

Refunds are distributed in the following order:
1. Unsubsidized Federal Stafford Loan
2. Subsidized Federal Stafford Loan
3. Federal PLUS Loan
4. Federal Perkins Loan
5. Federal Pell
6. Federal SEOG

Any questions regarding the return of Title IV programs should be directed to the Assistant Director of Student Financial Aid. Examples are available on request.

Fee Refund Schedule

Both graduate and undergraduate students who withdraw from this institution during a fall or spring semester will receive a refund of a percentage of tuition and refundable fees based on the schedule below.

Medical and dental students who withdraw in the fall of the academic year will receive a 100% refund of tuition and fees for the second half of the year (spring) and a refund for the first half of the year (fall) based upon the schedule below.

100 percent prior to the first day of classes
80 percent during the first five class days
70 percent during the second five class days
50 percent during the third five class days
25 percent during the fourth five class days

No refunds will be made in the case of withdrawal after the fourth five-day period.

Students who withdraw during a summer term may receive a refund of tuition and applicable fees based on the following schedule:

100 percent prior to the first class day
80 percent during the first, second, or third class day
50 percent during the fourth, fifth, or sixth class day

No refunds will be made on the seventh class day or thereafter.

Notice of intention to withdraw and a request for a refund of tuition and fees must be made in writing to the Registrar. The institution terminates student services and privileges at the time of the student’s withdrawal.

Refund for Courses Dropped

A refund of applicable tuition and fees for courses which are dropped within the first 12 days of a fall or spring semester or the first four days of a summer term will be made provided that the student remains enrolled in the institution for that semester or term. Refunds for courses dropped by a student who later in the semester or term withdraws from the institution will be based on the appropriate withdrawal schedule given below.

100 percent prior to the first day of classes
80 percent during the first five class days
70 percent during the second five class days
50 percent during the third five class days
25 percent during the fourth five class days

Financial Assistance

All students applying for admission to UTHSCSA are eligible to apply for federal financial assistance. Students in joint programs become eligible once they enter the professional phase of the program. To apply for all forms of federal or state financial aid a student must complete the Free Application for Federal Student Aid (FAFSA) on an annual basis. The FAFSA can be obtained from any college or university in the United States, most high schools and libraries, and on the Web at www.fafsa.ed.gov.

UTHSCSA may require additional information to complete your application. Please make sure all correspondence requests for information from the office, as all documents are required by federal regulation to process your application. Only send documents requested by the financial aid office. Do NOT send any other documents. Once all documents are received, your application is considered complete and is ready for awarding. Awards for financial assistance are not made until mid-April for semesters beginning in the subsequent fall term, and may span the entire award year (fall, spring, and summer) if the student indicates on the FAFSA that they plan to enroll all terms.

UTHSCSA has a “priority” deadline of April 1 for appli-
ations for financial aid for the subsequent fall semester. Students who are entering a program in what UTHSCSA considers a summer semester (applies only to nursing, allied health sciences, and advanced dental programs) must apply using the current FAFSA and the FAFSA for the next academic year. Students applying for aid after the priority deadline risk not having funds available at registration. However, in most cases, aid will be processed in less than a week, once the student has completed all document requirements. Student loans typically take two to three weeks to process by the state guarantee agency and the chosen lender. Disbursement of financial aid occurs for continuing students no earlier than 10 days prior to the first class day. New students can receive their disbursement at registration. Disbursements for Spring and Summer terms are also available no sooner than 10 days prior to than the first class day.

Selective Service
Students subject to selective service registration will be required to file a statement that the student has registered or is exempt from selective service registration in order to be eligible to apply for federal financial aid. In addition, the selective service requirement is also applicable to students applying for financial assistance funded by State revenue.
SCHOOLS

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Graduate School of Biomedical Sciences p. 123
Medical School  p. 168
School of Allied Health Sciences p. 180
School of Nursing  p. 252
Mission

The Dental School mission is the acquisition, dissemination, and use of knowledge toward the enhancement of oral health. This mission is addressed through four interrelated, action components: education, research, patient care, and community service.

All programs in the Dental School are accredited by the Commission on Dental Accreditation of the American Dental Association, a specialized accrediting body recognized by the U.S. Department of Education. The Commission’s last site visit occurred in February, 1998, resulting in “approval” status. The Commission may be contacted at 312-440-2719, or at 211 East Chicago Avenue, Chicago, IL 60611.

Admission and Application

Information about admission requirements is detailed in the Applicant Viewbook of the Dental School (online: http://studentservices.uthscsa.edu/publications/dental2.html). Applicants must have at least 90 semester-hour credits from a regionally accredited college or university. Applicants are required to complete courses in English, biology, physics, and chemistry by the end of the spring semester before entering Dental School, and with a grade no lower than C. In addition to scholastic requirements for admission, all candidates are required to take the Dental Admission Test (DAT). All applicants who are legal residents of Texas must apply through the Texas Medical and Dental Application Service. Applications are accomplished online at: http://www.utsystem.edu/tmdsas.

Attendance, Leave of Absence, Readmission

Class Attendance

Required attendance at all regularly scheduled classes, laboratories, and clinical periods is the option and prerogative of the academic department responsible for that particular portion of the curriculum. The policy regarding attendance will be announced at the beginning of each course.

Unexcused absences may be considered sufficient cause for issuing failing grades in courses requiring attendance. It is the responsibility of the student to arrange with the faculty for making up any work which is missed.

Leave of Absence

Students in good academic standing who wish an extended leave of absence for extenuating physical or personal reasons must submit a written request to the Dean stating reasons for such a request, the period of time involved, and intentions concerning resumption of dental studies. The Dean will consider such requests on their individual merit.

Generally, a leave of absence shall not exceed one year. Any additional leaves of absence must be reviewed and recommended by the Promotions Committee and approved by the Dean. The Dean’s Office must be notified of intentions to re-enroll by April of the next academic year. Students reenrolling as juniors or seniors will need to update their clinical skills during the time remediation is scheduled so that faculty are sure to be available. (For purposes of requests for a leave of absence, a student is considered to be in good academic standing if he/she has not received a final grade of F in any course completed during the current academic year.)

Readmission

Readmission to the freshman year requires that a student apply again according to the procedures required for first-time applicants and be accepted in competition with other applicants for that year. Readmission into the sophomore, junior, or senior years is contingent upon available space in the class.

Application for readmission after a leave of absence must be in the form of a written request to the Dean and must include satisfactory evidence that the condition or conditions necessitating the absence have been corrected and that the student is able to resume dental studies.

The policies contained in this Catalog concerning attendance, leave of absence, and readmission are those in effect at the time of publication but are subject to change. Students are responsible for inquiring about changes each year.

Faculty Advisors

Members of the faculty will be assigned as advisors to dental students and will be available for counseling. Students are urged to become well acquainted with their advisors. While it is expected that certain periods will be set aside for the faculty advisor and the student to meet, there will be informal and unscheduled times when students and faculty advisors should seek out each other. While the faculty members are assigned to assist students, the students must be mindful of their own responsibility for seeking help when it is needed and keeping advisors informed of problems they may be encountering.

Grades

The academic standards for successful completion and grade assignment shall be established by the department or task force under which the course is administered. In arriving at a final grade, consideration will be given to
written, oral, and practical examinations as well as clinical performance, when applicable. Noncognitive factors such as performance under stress, integrity, initiative, interpersonal relations, and personal and professional characteristics also will be considered.

A passing grade will not be awarded to a student whose performance in noncognitive areas is unacceptable. A copy of these standards will be given to students at the beginning of the course and made available for review in the departmental office and the offices of the Associate Deans for Student and Academic Affairs.

**Final Grades**

A final grade shall be reported after completion of a course as:

- **A** = Excellent
- **B** = Good
- **C** = Satisfactory
- **D** = Poor
- **F** = Failure in a graded course or failure to successfully complete an ungraded course.
- **CR** = Satisfactory completion of a required course for which no letter grade is given.

**Other Symbols Used on Transcripts:**

- **EX** = Exemption
- **I** = Incomplete. Not a final grade.
- **Q** = Course dropped with no penalty
- **WP** = Withdrew passing
- **WF** = Withdrew failing

**Credit Hours and Grade Point Average**

One semester hour credit is given for each:

- 15–18 clock hours of lecture or conference
- 30–36 clock hours of clinic or technique laboratory
- 45–60 clock hours of non-technique laboratory

Grade point average is calculated in the standard manner with the following weight assigned to grades:

- **A** = 4
- **B** = 3
- **C** = 2
- **D** = 1
- **F** = 0
- **CR** = Not used in calculation of GPA.

**Progress Reports**

**Reporting of Progress and Final Grades**

- Progress reports are submitted to the Associate Dean for Academic Affairs at midyear for each student enrolled in a course which extends into the next semester.

- Progress is reported as:
  - **S** = Satisfactory
  - **U** = Unsatisfactory

The course director or task force administering a course may report unsatisfactory progress to the student at any time throughout the duration of the course.

- Final grades are submitted to the Registrar and the Associate Dean for Academic Affairs for each student enrolled in a course when the course has been completed.

**Academic Warning**

At midyear, a student receives notification from the Associate Dean for Academic Affairs for one or both of the following reasons:

- Receiving an unsatisfactory report (U) for any course in progress.
- Achieving a grade point average less than 2.0 for either Group A* or Group B** courses completed during the fall semester.

This notification serves as an academic warning.

**Academic Probation**

A student receiving a final grade of F in a course at any time during the academic year is placed on academic probation. Except for senior students, the Promotions Committee does not recommend actions for correction of academic deficiencies until the end of the academic year when the student’s entire academic record can be considered.

**Academic Probation Criteria**

A student will be placed on academic probation, which prohibits a student from graduation or promotion to the next academic year, if he/she meets one or more of the following conditions:

- Receipt of a final F grade in any course at any time during the academic year.
- For DS1, 2, and 3 students, receipt of a GPA less than 2.0 in either Group A or Group B courses of a year’s curriculum, unless the student is dismissed. (See “Dismissal.”)
- For DS4 students, receipt of an overall GPA less than 2.0, unless the student is dismissed. (See “Dismissal.”)
- Failure to pass National Board Dental Examinations, Part I by the end of the junior year.
- Failure to pass National Board Dental Examinations, Part II by the end of the senior year.

A student will remain on academic probation until all academic deficiencies are corrected, unless the student is dismissed.

**Removal from Academic Probation**

To provide an opportunity for the student to correct academic deficiencies, such as F grades and/or a GPA less than 2.0 in Group A and/or Group B courses of the year’s

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*Assigned by the course director if he/she considers acceptable the reason for a student’s failure to satisfactorily complete all required work. A grade of I that is not corrected prior to the end of the academic year must be corrected during the summer remediation period.

*Group A - all basic science and dental didactic courses
**Group B - all preclinical laboratory and clinic courses
curriculum, the Promotions Committee may recommend remediation of specific courses or repetition of the year in its entirety.

To provide an opportunity for the student to correct National Board deficiencies, the Promotions Committee will recommend completion of an altered curriculum designed for skills maintenance, preparation for retesting, and achievement of a passing grade for the National Board Dental Examinations. All recommendations of the Promotions Committee require the approval of the Dean.

A student will be removed from Academic Probation status by the Promotions Committee when all academic deficiencies have been corrected. This action will make the student eligible for promotion to the next academic year.

**Correction of an “F” Grade Deficiency**

In an effort to help a student correct an F grade deficiency in one or more courses, the Promotions Committee may recommend one of the following courses of action:

- **Remediation** of the course or courses for which an F grade has been assigned.
  - Since failure to successfully remediate places the student in a category for academic dismissal, a student may elect to repeat the academic year in its entirety even though remediation has been recommended.
  - A course director will not initiate a remediation program for a student unless remediation has been recommended by the Promotions Committee and approved by the Dean.
  - The remediation program will be designed by the Course Director and approved by the Curriculum Committee.
  - Remediation for seniors may be scheduled during the academic year, but all other remediation will be scheduled during a four-week period in June/July.

- **Repetition** of the academic year in its entirety.
  - If remediation is not recommended by the Promotions Committee, the student must repeat the academic year in its entirety.

- **There is no remediation for the Junior Patient Management course.** Failure of this course will result in repetition of the academic year in its entirety or dismissal.

**Correction of a Grade Point Deficiency**

A student receiving a GPA below 2.0 in Group A and/or Group B courses of a year’s curriculum will be considered for dismissal.

However, after reviewing the student’s entire academic record and any extenuating circumstances, the Promotions Committee may recommend one of the following actions in lieu of dismissal:

- **Remediation** of one or more courses designated by the Promotions Committee which will help raise the deficient GPA to 2.0 or above. Since failure to successfully remediate a deficient GPA places a student in a category for academic dismissal, a student may elect to repeat the academic year in its entirety even though remediation has been recommended. (See “Dismissal.”)

- The remediation program will be designed by the Course Director and approved by the Curriculum Committee.

- Remediation for seniors may be scheduled during the academic year, but all other remediation will occur in a four-week period during the months of June and July.

- **Repetition** of the academic year in its entirety.

  - If remediation is not recommended by the Promotions Committee, the student must repeat the academic year in its entirety.

**Correction of National Board Deficiency**

In an effort to help a student correct a National Board deficiency, the Promotions Committee will recommend completion of an altered curriculum which includes requirements for skills maintenance, preparation for retesting, and achievement of a passing grade for the National Board Dental Examinations.

- The altered curriculum will be developed by the Associate Dean for Academic Affairs and approved by the Advisory Committee for Altered Curriculum.

- Eligibility for promotion or graduation will be restored upon satisfactory completion of all requirements of the altered curriculum.

- Failure to successfully complete all requirements of the altered curriculum by the end of the academic year will place the student in a category for academic dismissal.

- Junior students who retake the National Board Dental Examinations, Part I or any subset of the examination in the summer preceding their senior year will register as juniors for the fall semester, if the results of the examination are not known at the time of registration. Although they register as juniors, they will participate in senior didactic and clinical activities in the 1–3 week interval between registration and the time when the results of the examination are known.

Students may retake the NBII examination no sooner than 90 days from the last attempt. Students will not be allowed to graduate with their class if the correction of the NBII deficiency does not occur before the regularly scheduled graduation date. In that case, students will need to enroll for “Independent Studies” in the Dental School for the remainder of the summer, at no additional fees. This will assure that students continue to have all privileges as a student. After August 31, students must enroll as a “senior student on an altered curriculum” for this same benefit. This will require a prorated registration fee, including tuition and other fees, to be determined by the Registrar’s office.

**Course Remediation/Repetition**

**Final Grade**

A grade of C is the highest grade that can be achieved in the remediation of a course. Following remediation of a course, the grade assigned will be the grade (C, D, or F) achieved by the student as set forth in the academic standards of the remediation course.
Following repetition of a course during repetition of an academic year in its entirety, the grade assigned will be the grade achieved by the student as set forth in the academic standards of the course.

All grades achieved by a student in a course (i.e., original, remediation, repetition) will appear on the official transcript, but only the most recent grade achieved will be used in calculating the grade point averages.

The grade achieved by the student in remediation of an **F** grade in a course is the grade that will be used in calculating the Group A or Group B GPA for the academic year and the overall GPA; however, both grades for the course will appear on the final transcript.

The grade achieved by the student in remediation of a course in an attempt to correct a deficient Group A or Group B GPA (less than 2.0) is the grade that will be used in calculating the Group A or Group B GPA for the academic year and the overall GPA; however, both grades for the course will appear on the final transcript.

The grades achieved by the student in all courses in the repetition of the year in its entirety will be the grades used in calculating the Group A and Group B GPAs for the academic year and the overall GPA; however, the previous grade or grades achieved in each course also will appear on the final transcript.

**Failure to Successfully Remediate or Repeat Year**

A student who fails to correct an **F** grade deficiency or raise her/his deficient grade point average to 2.0 or above after remediation or repetition of the academic year will be considered for academic dismissal.

The Promotions Committee will review the entire academic record and any extenuating circumstances before making a recommendation for dismissal. Only in exceptional circumstances will the Promotions Committee recommend another correction program in lieu of dismissal. However, no student will be allowed to repeat an academic year more than once.

**Dismissal**

A student can be considered for dismissal from the school for academic deficiencies or violation of University regulations and Dental School Code of Ethics. The Promotions Committee is responsible for considering students for academic dismissal and makes its recommendations to the Dean. All recommendations of the Promotions Committee require the approval of the Dean.

**Academic Dismissal**

An option to appear before the Promotions Committee will be extended to the student before a vote is taken to recommend academic dismissal to the Dean. The purpose of the appearance is to inform the committee of extenuating circumstances which may have contributed to the student’s performance. The student may request that other appropriate verbal and/or written testimony regarding these circumstances be presented at this meeting. Before the vote is taken, all noncommittee members will be excused.

A student will be considered for academic dismissal if he/she meets any of the following conditions:

**GPA Deficiency**

- Receipt of a GPA less than 2.0 in either Group A or Group B courses of the year’s curriculum.
- Receipt of a GPA less than 2.0 in either Group A or Group B courses of the year’s curriculum after completing summer remediation or repetition of the academic year in its entirety.

**“F” Grade Deficiency**

- Unsuccessful attempt to remediate a course or courses for which an **F** grade has been given.
- Receipt of an **F** grade for a course or courses during the repetition of an academic year.

**National Board Deficiency**

Failure to successfully complete all the requirements of an altered curriculum designed to correct a National Board deficiency, which includes skills maintenance, preparation for retesting, and achievement of a passing grade for the National Board Dental Examination, Part I or Part II.

**Appeals Process**

A student may appeal a decision by the Promotions Committee recommending a) remediation, b) repetition of the year, or c) academic dismissal, which the Dean has sustained, by submitting to the Dean’s Office within five (5) days following receipt of written notification of the Committee’s recommendation a written request for an opportunity to appeal to the Dean of the Dental School.

The Dean will consult with appropriate individuals and render a decision to uphold or overturn the Promotions Committee decision. The student will receive written notification of the Dean’s decision.

Procedural appeal may be made to the President of the Health Science Center, in accordance with Health Science Center Policy.

**Disciplinary Probation and Dismissal**

Violation of Health Science Center regulations concerning standards of conduct which compromise professional integrity and/or competence will make a student eligible for either disciplinary probation or dismissal. Procedures for dismissal will be governed by the guidelines contained in the “Procedures and Regulations Governing Student Conduct and Discipline of the Health Science Center.”

The policies contained in this Catalog concerning grades, promotion, and graduation are those in effect at the time of publication and are subject to change. Students are responsible for inquiring about changes each year.
Promotion
Recommendation for promotion to the next year of the curriculum is made by the Promotions Committee to the Dean. A student will be recommended for promotion to the next year of the curriculum if a grade point average of 2.0 or above is achieved in both the Group A and Group B courses of the year’s curriculum and a passing grade has been achieved in all courses in the year’s curriculum. Promotion to the senior year also requires having passed the National Board Dental Examination, Part I.

Graduation
The degree Doctor of Dental Surgery is awarded by the Board of Regents upon recommendation of the faculty to the Dean and certification by the Dean to the President. Candidates must have satisfactorily fulfilled the academic requirements of the dental curriculum, have a cumulative GPA of 2.0 or above, have passed National Board Dental Examinations, Part I and Part II, be of good moral character, and comply with all necessary legal and financial requirements.

Candidates for the degree must have fulfilled all requirements within six years of registering in the freshman class. Approved leaves of absence will not be included in this time period.

Curriculum
The dental curriculum normally requires four academic years. Although most instruction is presented by dental science and basic science departments, there are interdisciplinary courses which integrate subject material from two or more disciplines. Most of the required basic science courses are presented during the first two years of the program with some continuation through the last two years. Clinical experience, including training at extramural sites, begins minimally in the first year and increases each year until it predominates in the last two. Requirements of extramural clinical training sites necessitate criminal background checks of students.

Although the philosophy of the Dental School is to emphasize the importance of comprehensive care, juniors are taught primarily by faculty of clinical specialty departments and divisions as they begin to develop competency in each clinical discipline. During this year, patients screened and selected by the Department of Dental Diagnostic Science are assigned to students for treatment. In order that comprehensive care may be provided, several students may be assigned to one patient. Such a team approach provides an opportunity for maximum experience in each clinical discipline.

Senior students are taught primarily by the faculty of the Department of General Dentistry with the clinical specialty departments acting as consultants. Seniors are provided the opportunity to diagnose, plan treatment, and accomplish all the necessary clinical procedures for patients that would be routine in a general practice environment.

The curriculum of the Dental School is a dynamic process with continuous evaluation by the faculty through various committees and with input by students. The approval process for changes prevents capricious changes but allows for significant changes when warranted. Changes are ongoing; therefore, the information in the Catalog is subject to change.

Senior Clinical Honors Program
A special education program is available for students who demonstrate the ability to progress more rapidly than their classmates. Ten such students are selected for the Clinical Honors Program during the junior year. Selection starts with the nomination by clinical course directors and team leaders of students who they believe are outstanding clinicians. Nominations are collated by the Altered Curricula Committee and ballots are prepared for final selection by clinical course directors and team leaders.

Teacher Training Honors Program
The Teacher Training Honors Program recognizes students who, in addition to their clinical dental program, have developed teaching skills and performed academic-related research. Students in the program complete three special teaching electives: Teaching Training, Teaching Experience, and Project Summary and Evaluation. Students who successfully complete this program will graduate with the designation Honors in Teaching Training on their official transcripts.

Research Honors Program
The Research Honors Program recognizes student investigators who, in addition to their clinical dental program, have acquired research skills and accomplished significant research activity. Students in this program complete three Special Research Electives — Protocol Development, Completion of Individually Designed Research and Manuscript Preparation, and Presentation of Individually Designed Research. Students who successfully complete this program will graduate with the designation Honors in Research on their official transcripts.

Other Academic Recognition Programs
Scholarship in Basic Sciences
The criterion for selection for this award is achievement of a cumulative GPA of 3.9 for the following courses: biochemistry, gross anatomy, micro-anatomy, microbiology, physiology, general pathology, neuroscience, and pharmacology. If a course is remediated or repeated, both grades for the course will be included in the calculation of the GPA. Recognition for this award will include a permanent entry on the student’s transcript.
Dental School 89
Graduate Studies, the faculty mentor, the Associate Dean of the Graduate School of Biomedical Sciences, and the Associate Deans for Academic Affairs and Research of the Dental School.

Advanced Education Programs
Certificate and Master of Science degree programs, residency programs in General Dentistry, Oral & Maxillofacial Surgery and an Advanced Education in General Dentistry program are offered at the Health Science Center. The certificate programs in Dental Diagnostic Science, Endodontics, and Pediatric Dentistry require two years of study; Periodontics and Prosthodontics certificate programs require three years. Subsequent admission to the Graduate School of Biomedical Sciences (at the end of the first year of study) and successful completion of graduate study are required for the Master of Science degree offered in Periodontics, Prosthodontics, Endodontics, or Dental Diagnostic Science. The General Practice residency program and Advanced Education in General Dentistry program, conducted by the Department of General Dentistry, are one year in length. The Orthodontics residency program is 35 months. A 72-month residency program in Oral & Maxillofacial Surgery is affiliated with the Dental School.

Course Numbering System
The four-letter prefix denotes the department presenting the course. The first digit of the course number indicates the academic level: 5-freshman; 6-sophomore; 7-junior; 8-senior. The other digits make up an internal identification code. Credit hour value of courses is indicated as part of the course description.

The following abbreviations are used as prefixes:

- BIOC: Biochemistry
- COMD: Community Dentistry
- CSBL: Cellular & Structural Biology
- DIAG: Dental Diagnostic Science
- ENDO: Endodontics
- GEND: General Dentistry
- INTD: Interdisciplinary
- MICR: Microbiology and Immunology
- ORTH: Orthodontics
- OSUR: Oral & Maxillofacial Surgery
- PATH: Pathology
- PEDO: Pediatric Dentistry
- PERI: Periodontics
- PHAR: Pharmacology
- PHYL: Physiology
- PROS: Prosthodontics
- RESD: Restorative Dentistry

Award for Excellence in Clinical Dentistry
The criterion for this award is achievement of a GPA of 3.8 or above for Group B courses in both the junior and senior years. If a course is repeated or remediated, both grades received in the course will be used in calculating the GPA. Recognition for this award will include a permanent entry on the student’s transcript.

Achievement on National Board Dental Examination, Part I
The criterion for this award is achievement of a score of 90 or above on the National Board Dental Examination, Part I. Recognition for this award will include presentation of a certificate at the annual Dental School Awards Convocation.

Award for Exemplary Achievement on the National Board Dental Examination, Part II
The criterion for this award is achievement of a score of 90 or above on the National Board Dental Examination, Part II. Recognition for this award will include presentation of a certificate at the annual Dental School Awards Convocation.

Dual Degree Programs
Dual degree programs of study at The University of Texas Health Science Center at San Antonio provide a mechanism for medical or dental students to obtain an M.S. or Ph.D. degree in addition to an M.D. or D.D.S. The purpose of these programs is the training of clinical scientists who have not only depth of knowledge in clinical medicine or dentistry and basic sciences but also experience in research planning and execution. Such scientists are therefore exceptionally qualified to apply specialized research competence to the resolution of clinical problems.

A student who wishes to obtain both a professional and a graduate degree must satisfy the entrance requirements of both the Dental School and the Graduate School of Biomedical Sciences, and approval for admission must be accomplished separately. Students submit applications for admission to both the graduate program and Dental School during the fall prior to attendance. It is necessary that the student’s academic standing and progress in Dental School are consonant with her/his pursuit of a dual degree program of study.

Accepted applicants must meet the full requirements defined for both the professional and the graduate degree. The total time for the dual degree program curriculum is designed to be at least six years. However, utilization of summer sessions and elective periods is mandatory for this total time span.

The detailed logistics of pursuing a dual degree program will depend on the specific graduate program undertaken and, in every instance, should be worked out among the student, the appropriate Committee on Graduate Studies, the faculty mentor, the Associate Dean of the Graduate School of Biomedical Sciences, and the Associate Deans for Academic Affairs and Research of the Dental School.
**Course Descriptions**

**BIOC 5013 Biochemistry**

*5.5 Semester Credit Hours*

Primarily lectures and conferences, this course is designed as a survey course for dental students. Content deals with the chemistry and metabolism of carbohydrates, amino acids, lipids, proteins, and nucleic acids. Special topics relating to the biochemistry of the oral cavity will be presented. The relationship between biochemistry and clinical aspects of dentistry is presented by clinical correlation speakers.

**COMD 5002 Behavioral Dentistry I**

*1.0 Semester Credit Hour*

This course presents information designed to enhance the personal, professional, and patient management skills of the future practitioner. Topics, including stress management, communication skills, and time management, are included to aid the student in dealing with the academic environment as well as future dental patients. Information on clinical protocol and record management are intended to provide the student an opportunity to experience initial practice and clinical management.

**COMD 5010 Clinical Judgment & Evaluation**

*1.0 Semester Credit Hour*

Designed to help students establish an “evidence-based practice,” the course will provide students the opportunity to learn the skills necessary to evaluate and select new dental products and clinical procedures. This requires an ability to read and evaluate various sources of knowledge, including articles published in the dental and medical literature, advertisements, Internet sources, and continuing education programs. Lectures and readings are designed to provide a basic understanding of clinical research, epidemiology, and statistical procedures such that dental journal articles and other sources of knowledge can be critically evaluated. The long-range goal is to prepare the student to think critically and to make sound judgments regarding the acceptance of new knowledge, products, and procedures in private practice.

**COMD 5025 Nutrition**

*1.0 Semester Credit Hour*

Elements of nutrition are presented in a lecture series. Special attention is given to those aspects of nutrition that relate to dental health and the prevention of dental diseases.
COMD 5015  School-Based Prevention
0.0 Semester Credit Hours
Students have the opportunity to participate in a public health preventive program in elementary schools, supervising a fluoride rinse program and providing small-group instruction in toothbrushing. The program aims to demonstrate to dental students effective group prevention and to foster more widespread adoption of such preventive programs in the community.

COMD 5017  Preventive and Community Dentistry
1.0 semester credit hour
This course provides an introduction to the first-year dental students of the theoretical and practical concepts of the prevention of oral disease and conditions at the community level. This course, therefore, is a foundation course in dental public health, oral epidemiology and oral disease prevention, and promotion of health in the community. This course is subdivided into three general topic areas: an overview of public health and, specifically, dental public health and oral epidemiology; the second session will focus on the etiology of oral disease and examine the epidemiology of specific oral diseases; and the third section examines health promotion efforts in the community for caries and other oral diseases.

CSBL 5016  Gross, Head & Neck Anatomy
7.5 Semester Credit Hours
The structure of the human body, with emphasis upon the functional anatomy of the trunk, neck, and head, is the focus of this course. Regional dissection of a human cadaver, by groups of students, is supplemented by individual study of prosections, models, skeletons, and other demonstration materials and is guided by lectures, conferences, and films. The first part of the course, which deals with the anatomy of the thorax and abdomen, presents a general overview of the functional architecture of most major body systems. The emphasis is on principles of structure, to allow development of a holistic understanding of human biology, both normal and pathological. The latter half of the course is devoted to study of the head and neck; greater emphasis will be placed on anatomical relationships with obvious reference to clinical dentistry. Human materials fee: $300.

COMD 5046  Cariology
0.5 Semester Credit Hour
This is designed to be a comprehensive course in cariology, covering the scientific background, etiology and clinical aspects of prevention of dental caries.

CSBL 5032  Dental Histology
5.0 Semester Credit Hours
Through lectures, demonstrations, and laboratory work, students in this course will be given the opportunity to study the microscopic structure of the basic tissues and organs of the human body, followed by details of the embryologic development and microscopic structure of the various organs of the oral cavity. Current concepts in cellular biology are presented during the portion of the course in which they are most relevant. The general purpose of this course is to give students the opportunity to become acquainted with the basic embryology, cytology, and histology of normal human tissues and organs, thereby providing a foundation of knowledge for the understanding of normal activity and disease processes. Lab fee included in general lab fee. $48 microscope fee for the Freshman year includes this course.

DIAG 5009  Introduction to Dental Radiology
1.0 Semester Credit Hour
This course provides students with an opportunity to develop preclinical technical skills in placing, exposing, processing, and mounting dental radiographs using a technique mannequin (DXTTR). Students will also have an opportunity to gain preliminary experience in the assessment of radiographs for normal anatomic structures, caries, periodontal disease, and other dental anomalies.

DIAG 5014  Physical Evaluation
1.0 Semester Credit Hour
The curriculum includes didactic and clinical experience in obtaining and interpreting a patient history; extraoral and intraoral physical examination procedures; interpretation of the findings of the examination; obtaining and interpreting appropriate clinical laboratory examinations; communication with health care professionals; risk status assessment and documentation.

DIAG 5049  Practical Infection Control in Dentistry
1.0 Semester Credit Hour
Practical infection control, used by dentists to combat the threat of hepatitis, AIDS, and other infectious diseases to the dentist, dental staff, and patients is presented. Subjects will include patient screening, personal protection, instrument sterilization, surface and equipment disinfection, aseptic technique, and laboratory asepsis. Emphasis will be placed on the major infectious diseases, technique selection, and product evaluation. A review of current infection control guidelines is included. Handouts appropriate for a dental office infection control manual will be used.

EMST 5001  Basic Cardiac Life Support
0.0 Semester Credit Hours
Course instruction satisfies AHA guidelines for Basic Cardiac Life Support (BCLS). Successful completion merits AHA BLS Provider course completion card. Topics include basic airway and ventilatory management of the choking and/or unconscious infant, child, or adult victim; cardiac chest compression techniques; automated external defibrillation (AED). AHA standard written and skills exams administered.

INTD 5015  Case Conferences
0.5 Semester Credit Hour
As a series of nine conferences, this course is designed to enhance interaction between the basic and clinical sciences while offering a participative learning experience. The integrative, multidisciplinary academic format is designed to promote development of analytical and critical thinking and problem-solving skills essential for successful clinical practice. Freshman conferences emphasize the relevance of clinical material, that will be presented later in the curriculum, to the basic science information that predominates in the freshman curriculum.

INTD 5030  Introduction to Patient Care
5.5 Semester Credit Hours
Freshman students are introduced to and familiarized with assisting techniques that will permit the student to participate in actual patient care delivery during the first year of dental school.

MICR 5013  Microbiology
4.0 Semester Credit Hours
Foundation in immunology, bacteriology, virology, and mycology for all subsequent teaching of microbial pathology and oral
infectious diseases is presented. Relevant aspects of preventive medicine and public health are included. Lab fee included in general lab fee.

**PERI 5081  Periodontics I**

1.5 Semester Credit Hours

This course provides an introduction to the periodontal diseases with a particular focus on their etiology and pathogenesis. Basic science information regarding the microbial etiology of the periodontal diseases and the immunologic responses of the host are presented in the context of the clinical setting. Clinical, histopathologic, immunologic, and microbiologic information is provided in a coordinated description of the etiology, pathogenesis, and clinical manifestations of disease.

**PHAR 5001  Pharmacology**

4.0 Semester Credit Hours

A study of the general principles of action of drugs used for the treatment and alleviation of symptoms of medical and dental diseases including pharmacodynamics of major drug groups, toxicology, and contemporary prescription writing.

**PHYL 5013  Dental Physiology**

6.5 Semester Credit Hours

Lecture instruction in the basic concepts of cell and organ function and in the integrated function of mammalian organ systems is presented. The physiology of the nervous system is included.

**PROS 5088  Diagnostic Casts and Impressions**

0.5 Semester Credit Hour

The student will be introduced to clinical procedures. Students will be given the opportunity to participate as a patient, assistant, and dentist in making impressions and pouring casts.

**RESD 5001  Biomaterials I**

1.0 Semester Credit Hour

An introduction to fundamental physical, mechanical, and chemical properties of materials is provided. Lectures include basic introductions to the fields of metals, polymers, and ceramics.

**RESD 5003  Operative Dentistry**

1.0 Semester Credit Hour

Didactic presentation of nomenclature, instrumentation, and theoretical concepts involved in the preparation and restoration of the Class 1, 2 and 5 amalgam cavity.

**RESD 5004  Dental Anatomy**

1.5 Semester Credit Hours

This course offers freshmen students an opportunity to learn anatomical, morphological, and functional aspects of the oral cavity. Dentition and their supporting structures are emphasized.

**RESD 5005  Preclinical Dental Anatomy**

2.5 Semester Credit Hours

This course provides an opportunity for students to learn to develop manual dexterity and eye-hand coordination by carving and waxing ivorine teeth. Students are expected to reach the proficiency level required to satisfactorily perform the laboratory and clinical tasks assigned in subsequent courses. Lab fee included in general lab fee.

**RESD 5011  Occlusion Lecture**

0.5 Semester Credit Hour

This course introduces students to basic concepts of occlusion by providing a detailed study of normal occlusal relationships in all jaw positions and movements.

**RESD 5012  Preclinical Occlusion**

1.0 Semester Credit Hour

Students have the opportunity to develop functional occlusal relationships in wax on the mounted cast. Lab fee included in general lab fee.

**RESD 5014  Preclinical Operative Dentistry**

2.0 Semester Credit Hours

Instructions, demonstrations, and laboratory exercises in the instrumentation of Class 1, 2 and 5 amalgam preparations and restorations are presented. Lab fee included in general lab fee.
### The Sophomore Year

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester I Credit Hours</th>
<th>Semester II Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMD 6018</td>
<td>Preventive and Community Dentistry</td>
<td>x</td>
<td>0.5</td>
</tr>
<tr>
<td>COMD 6031</td>
<td>Professional Ethics</td>
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<tr>
<td>COMD 6048</td>
<td>Caries Risk Management</td>
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<tr>
<td>DIAG 6035</td>
<td>Diagnosis, Treatment Planning and Evidence-Based Dentistry</td>
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<tr>
<td>DIAG 6132</td>
<td>Dental Radiology I</td>
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<tr>
<td>ENDO 6041</td>
<td>Endodontics Lecture</td>
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<tr>
<td>ENDO 6142</td>
<td>Preclinical Endodontics</td>
<td>x</td>
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<tr>
<td>INTD 6015</td>
<td>Case Conferences</td>
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<tr>
<td>INTD 6088</td>
<td>Clinic Introduction</td>
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<td>ORTH 6075</td>
<td>Orthodontics</td>
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<td>OSUR 6051</td>
<td>Oral and Maxillofacial Surgery I</td>
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<td>OSUR 6056</td>
<td>Local Anesthesia</td>
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<td>Growth &amp; Development</td>
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<td>RESD 6015</td>
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</tr>
</tbody>
</table>

- x = semester(s) presented
- A single grade at the end of the year is given for courses which extend through both semesters.

### Course Descriptions

**COMD 6018 Preventive and Community Dentistry**

*0.5 Semester Credit Hour*

This course introduces students to principles of epidemiology and prevention of oral diseases, with the emphasis on plaque mediated diseases, dental caries, and periodontal diseases. Prevention is presented both at individual and community/population levels, but the focus is on prevention at the population level.

**COMD 6031 Professional Ethics**

*0.0 Semester Credit Hours*

The application of ethical principles in the everyday practice of dentistry such as informed consent, truth telling, confidentiality, paternalism, and refusal to treat.

**COMD 6048 Caries Risk Management**

*1.0 Semester Credit Hour*

This is designed to be a comprehensive course in cariology, covering the scientific background, etiology and clinical aspects of prevention of dental caries.

**DIAG 6035 Diagnosis, Treatment Planning, and Evidence-Based Dentistry**

*1.0 Semester Credit Hour*

The importance of an accurate diagnosis and patient evaluation upon which to base a rational treatment plan is the emphasis of this course. Lectures on types of clinical exams, chief complaint, and clinical and medical history are presented. Study of the normal appearance and presentation of abnormalities and disease as they relate to various areas of the oral cavity is also included, with special emphasis on the soft tissues. Methodology in diagnosis includes case history, general and oral clinical examinations, clinical laboratory, and other supplementary examinations. Clinical and radiographic characteristics, as well as signs and symptoms of car-
ies, are discussed. Lectures stress the examination of the teeth and their supporting structures as they relate to the accurate diagnosis of caries, pulp pain, and diseases which could mimic pulp pain. Factors affecting treatment plans, with emphasis on medical compromises, also are presented.

DIAG 6132 Dental Radiology I
1.0 Semester Credit Hour
This course offers an introduction to dental radiology including didactic and clinical instruction in radiation physics, radiation biology, radiation hygiene, film processing, and radiological interpretation of normal anatomy, caries, periodontal disease, and periapical disease.

ENDO 6041 Endodontics Lecture
1.0 Semester Credit Hour
This is a lecture course designed to introduce the student to the fundamentals of clinical endodontics.

ENDO 6142 Preclinical Endodontics
1.5 Semester Credit Hours
A preclinical endodontics course in which the student is introduced, under simulated clinical conditions, to clinical skills necessary to perform root canal therapy on single and multi-rooted teeth. Lab fee included in general laboratory fee.

INTD 6015 Case Conferences
0.5 Semester Credit Hour
As a series of eight conferences, this course is designed to enhance interaction between the basic and clinical sciences while providing a participative learning experience for students. The integrative, multidisciplinary academic format promotes an opportunity for students to develop the analytical, critical thinking, and problem solving skills essential for successful clinical practice. Pertinent topics not covered elsewhere in the curriculum may be included.

INTD 6088 Clinic Introduction
4.5 Semester Credit Hours
This course is designed to ease the students’ transition from laboratory to clinic, allowing them an opportunity to apply, in a clinical setting, skills and knowledge which were presented in previous basic science and preclinical courses. It also allows students the opportunity to practice patient and time management skills while preparing patients in various stages of diagnostic workup or treatment for the junior clinic. Finally, it introduces students to the paperwork and staff interaction needed in the junior year.

ORTH 6075 Orthodontics
1.5 Semester Credit Hours
An introduction to orthodontics including definitions, scope of orthodontics, classifications and etiology of malocclusion, and the diagnostic criteria and biomechanics of specific orthodontic appliances which are fabricated in the companion orthodontic laboratory course.

OSUR 6051 Oral & Maxillofacial Surgery I
1.5 Semester Credit Hours
Didactic presentation of basic principles of oral & maxillofacial surgery is included in this course. Detailed instruction in biopsy technique, suturing, tooth removal, preparation of the mouth for dentures, and minor oral surgery is included. Lab fee included in general laboratory fee.

OSUR 6056 Local Anesthesia
1.5 Semester Credit Hours
A didactic course dealing with aspects of local anesthesia as they relate to dental practice. Neuroanatomy, physiology, and pharmacology of local anesthesia is presented as well as the prevention and management of complications and emergencies encountered in clinical local anesthesia.

OSUR 6140 Nitrous Oxide and Conscious Sedation
0.5 Semester Credit Hour
A didactic and laboratory course presenting the fundamentals of patient anxiety control through the use of nitrous oxide conscious sedation for both the adult and child patient.

PATH 6019 General Pathology
5.0 Semester Credit Hours
The fundamentals of human pathology, with emphasis on practical clinical applications, are presented. Lectures, independent study, and laboratory experiences are used in a review of the principal diseases of major organ systems. Lab fee included in general laboratory fee. $48 microscope fee.

PATH 6021 Oral Pathology
4.0 Semester Credit Hours
A didactic course which introduces the basic pathological changes which occur in oral tissue. Lectures are supplemented by Kodachrome® illustrations with emphasis placed upon histoclinical correlation.

PEDO 6001 Growth & Development
1.5 Semester Credit Hours
This course is designed to present a comprehensive approach to the morphologic, biochemical, and physiologic aspects of human growth and development. A review of the control and influence of genetic, hormonal, and environmental factors on the various tissues and organ systems, from the embryonic period to maturity, with particular emphasis devoted to the functional development of the oral and perioral structures. Etiology of certain orofacial abnormalities of developmental nature are covered. This is a joint presentation by faculty of Pediatric Dentistry and Orthodontics departments.

PERI 6082 Periodontics
1.5 Semester Credit Hours
During the first semester, the objectives and rationale for periodontal therapy are presented. Lectures, laboratory, clinical exercises, and case presentations are sequenced to encourage a progressive development of diagnostic and initial therapy skills. Prevention and control of the bacterial causes of periodontal diseases are emphasized. Specific topics include periodontal examination, diagnosis, prognosis, treatment planning, plaque control, subgingival therapy, and local modifying etiologic factors. The second semester expands the information on therapy. Specific methods for diagnosing and treating acute periodontal disease are described. Emphasis is given to systemic diseases which mimic periodontal disease and modify therapy. The importance and rationale of maintenance is stressed. Current information concerning chemotherapeutics in periodontics also is presented. Lab fee included in general laboratory fee.

PROS 6011 Fixed Prosthodontics
2.5 Semester Credit Hours
A lecture series designed to provide the basic concepts and principles of fixed prosthodontics, involving single and multiple restorations; the rationale and methodology for full and partial
veneer preparations; and the fabrication of restorations and the restoration of endodontically treated teeth.

**PROS 6012 Preclinical Fixed Prosthodontics**  
4.0 Semester Credit Hours  
A laboratory course with exercises that include steps involved in the fabrication of crowns and short span, fixed partial dentures. Major emphasis is placed on restoration design and clinically related phases of restoration planning and construction. Projects include coverage of the metal ceramic technique, use of conventional Type III dental gold alloy, and development of natural-appearing tooth contours with restorative material systems. Principles of tooth preparation and restoration design are applied to the fabrication of single crown and multiple abutment restorations. Lab fee included in general laboratory fee.

**PROS 6018 Complete Prosthodontics**  
1.5 Semester Credit Hours  
An introduction to the diagnostic, treatment, and maintenance phases in the rehabilitation of an endentulous patient is presented. Lecture topics include biomechanics of the endentulous state, clinical examinations and diagnosis, endentulous impressions, maxillomandibular relations, denture esthetics, denture occlusion, initial placement of complete dentures, and post-placement care and maintenance of an endentulous patient.

**PROS 6019 Preclinical Complete Prosthodontics**  
2.0 Semester Credit Hours  
A preclinical laboratory course introducing, demonstrating, and exercises in the laboratory phases of the fabrication and repair of complete dentures is presented. Students will be expected to reach the proficiency level required to satisfactorily perform the laboratory and clinical tasks assigned in subsequent courses and to assess those procedures generally performed by dental laboratory technicians. Lab fee included in general laboratory fee.

**PROS 6058 Preclinical Implantology**  
1.0 Semester Credit Hour  
A preclinical participation course providing instruction and exercises in many phases relating to implant dentistry. Participation in this preclinical laboratory will provide the student with experience in planning implant therapy, placing implants, making implant impressions, fabricating provisional restorations, and performing other implant-related procedures. Fee: $500.

**PROS 6059 Introduction to Implantology**  
1.0 Semester Credit Hour  
A lecture series designed to orient sophomore dental students to the overall clinical issues inherent to implant dentistry. Lecture topics include the biology and biomaterials of dental implants, patient selection and treatment planning, restorative potential of dental implants, nomenclature and components of implant systems, prosthetic and surgical considerations for implant placement, and implant maintenance.

**PROS 6094 Removable Partial Denture Prosthodontics Lecture**  
1.5 Semester Credit Hours  
A preclinical lecture course stressing the association of biological and mechanical principles in planning and constructing removable partial dentures. Emphasis is placed on establishing a proper working relationship with commercial dental laboratories.

**PROS 6095 Preclinical Removable Partial Denture Prosthodontics Lab**  
1.0 Semester Credit Hour  
Exercises associated with the lecture course including diagnosis, treatment planning, survey and design, and the construction technique of removable partial dentures are presented. Lab fee included in general laboratory fee.

**RESD 6001 Operative Dentistry**  
1.0 Semester Credit Hour  
Lectures provide basic restorative philosophy and techniques in cavity design, instrumentation, and restorative material manipulation used in modern dentistry. These lectures are designed to augment the preclinical projects conducted in the laboratory which provide simulation of clinical conditions.

**RESD 6002 Preclinical Operative Dentistry**  
2.0 Semester Credit Hours  
Preclinical projects provide students an opportunity to practice skills presented in the lecture course. Exercises include mixing and placement of interim restorative materials, glass ionomer, silver amalgam, and composite resin. Lab fee included in general laboratory fee.

**RESD 6011 Occlusion II**  
1.0 Semester Credit Hour  
In this preclinical course, considerations are given to concepts of occlusion as compared to functional ones. Factors of mandibular movements and gui- dance of occlusion are compared with the so-called freedom-in-centric and its derivatives. This course deals with the classification and differential diagnosis of disorders related to the masticatory system and neighboring structures. The effects of joint and occlusion on occlusion, such as masseter, temporalis, and lateral pterygoid, are stressed. The occlusal adjustment advocated as treatment and/or equilibration procedures producing the so-called freedom-in-centric is introduced, as are goals, objectives, and variations for the equilibration of the natural dentition. The varied uses of occlusal bite plane splints are discussed together with the presentation of two different techniques to fabricate a stabilization type of bite splint.

**RESD 6102 Biomaterials II**  
1.0 Semester Credit Hour  
A didactic introduction to dental materials by classification, this course describes the manipulative and technical aspects of each existing material category and relates the basic physical, mechanical, and chemical properties to the desired end use so that intelligent choices may be made as new materials become available.

**RESD 6105 Preclinical Occlusion II**  
0.5 Semester Credit Hour  
The objectives of this course are focused on laboratory projects dealing initially with the analysis of tooth contact relationship on casts mounted on semi-adjustable articulators. Aspects of freedom-in-centric are explained for occlusal adjustment of mounted casts with different sizes and configurations. In order to observe all ranges of jaw movements and relationships, casts are mounted simulating centric relation position. Procedures for fabrication of occlusal bite-plane splints also are carried out. The teaching of fabrication of bite-splints (stabilization type) involves first the use of a waxing technique followed by the fabrication of all immediate bite-splints using visible light cured material. All procedures are explained using videotape presentations specially produced by the Division of Occlusion. Lab fee included in general laboratory fee.
## The Junior Year

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* x = semester(s) presented
* A single grade at the end of the year is given for courses which extend through both semesters.

## Course Descriptions

### COMD 7003  Behavioral Dentistry II

**1.0 Semester Credit Hour**

Application of the basic concepts presented in COMD 6002 Behavioral Dentistry is the focus. Primary topics include patient management, origin and treatment of dental fear, special patient considerations, and maladaptive oral habits. Small group discussions consider topics ranging from communication skills in dentistry to the decision-making process of practice dilemmas.

### COMD 7050  Preventive Dentistry Practice

**1.5 Semester Credit Hours**

As part of the junior clinic, this course is for the clinical application of prior study of Preventive & Community Dentistry, Preventive Methods, Nutrition, Cariology, Caries Risk Management, and Sophomore Clinic. With the emphasis on dental caries, it also includes prevention of gingivitis, oral cancer, and orofacial trauma. Students record preventive history, diagnosis and document caries, request appropriate lab and dietary assessments, carry out a caries activity (risk) assessment, write a preventive plan, and evaluate outcomes.

### DIAG 7032  Diagnosis and Treatment Planning Clinic

**1.5 Semester Credit Hours**

Students’ clinical progress is monitored via diagnosis and treatment planning consultations with and presentations to various members of the department throughout the year. Students participate in a Diagnosis and Treatment Planning Clinic in which each patient is presented for examination and discussion by members of the departments involved in that patient’s proposed treatment. Complete diagnostic evaluations are individualized to the patient’s needs. A comprehensive final treatment plan is thereby formulated for the patient.
DIAG 7036  Dental Radiology  
1.0 Semester Credit Hour  
A comprehensive didactic course in dental radiologic interpretation of diseases of the jaws including differential radiological diagnosis of developmental abnormalities and pathological lesions of the teeth and jaws.

DIAG 7055  Clinical Medicine  
3.0 Semester Credit Hours  
Lectures, demonstrations, and visual aids present the fundamentals of diagnosis and treatment in general medicine and surgery as they relate to dentistry. Students have the opportunity to demonstrate skill in physical diagnosis in laboratory sessions.

DIAG 7083  Dental Radiology Clinic  
1.5 Semester Credit Hours  
A comprehensive clinical experience in dental radiology, this course gives students the opportunity to acquire experience in making and processing intraoral and extraoral radiographs of assigned patients. One-on-one instruction is given in the principles of radiologic interpretation of assigned patients, and students are required to prepare a comprehensive radiological report on two faculty-assigned patients.

EMST 7001  Basic Cardiac Life Support  
0.0 Semester Credit Hour  
Course instruction satisfies AHA guidelines for Basic Cardiac Life Support. Successful completion merits AHA BLS Healthcare Provider course completion certification. Topics include basic airway and ventilatory management of the choking and/or unconscious infant, child or adult victim, cardiac chest compression techniques, and automated external defibrillation (AED). AHA standard written and skills exams administered.

ENDO 7041  Endodontics Lecture  
1.0 Semester Credit Hour  
This didactic course emphasizes diagnosis, treatment planning, and management of endodontic problems.

ENDO 7043  Endodontics Clinic  
1.0 Semester Credit Hour  
Students are required to perform endodontic diagnosis and treatment procedures necessary to provide comprehensive care for patients.

GEND 7026  Practice Administration  
2.5 Semester Credit Hours  
This course presents the various career choices available in dentistry and presents material to aid students in the career decision-making process. An introduction to the basic principles of beginning and managing a dental practice with emphasis on establishing a philosophy of practice, establishing goals, selecting practice modes, and choosing a location. The principles of office design and equipment selection also are covered.

INTD 7015  Case Conferences  
1.0 Semester Credit Hour  
A series of 16 conferences designed to enhance interaction between the basic and clinical sciences while providing an active learning experience for students. The interactive and multidisciplinary format of the case conferences promotes the development of problem solving skills essential for successful clinical practice.

The junior case conferences emphasize the direct application of basic science knowledge to clinical dentistry.

INTD 7020  Clinical Patient Management  
5.0 Semester Credit Hours  
This course is designed to help students develop skills in clinical behavioral dentistry through small group discussions, lectures, and routine patient treatment by application of the principles of coordinating patient care; communicating effectively with colleagues, staff, and faculty; and managing time, records, and environment. The students are required to manage their comprehensive care patients in the Junior Clinic following the principles presented in this course.

ORTH 7073  Orthodontics  
1.0 Semester Credit Hour  
This advanced lecture/case presentation series emphasizes the principles of orthodontic diagnostic and treatment planning for limited orthodontic procedures and the principles of comprehensive orthodontic therapy, interdisciplinary dentistry, and orthognathic surgery.

OSUR 7024  Nitrous Oxide Sedation Clinic  
0.5 Semester Credit Hour  
Students are given the opportunity to utilize nitrous oxide conscious sedation in a clinical setting under faculty supervision.

OSUR 7050  Oral & Maxillofacial Surgery  
0.5 Semester Credit Hour  
In this didactic course, students are instructed in the removal of impacted teeth and of oral & maxillofacial surgery complications. Students also are instructed in general concepts of diagnosis of acute infections, bone grafting, and reconstructive surgery, as well as diseases of the salivary glands.

OSUR 7051  Oral & Maxillofacial Surgery Clinic  
1.5 Semester Credit Hours  
Rotational experiences are accomplished at both the University Health Center outpatient clinic and the Dental School’s oral & maxillofacial clinic. These clinics provide experience in evaluating patient complaints and their clinical presentation, followed by the indicated treatment including removal of teeth, treatment of odontogenic infection, and other minor surgical procedures under the supervision of the Dental School faculty. Nitrous oxide conscious sedation also is practiced.

OSUR 7061  Advanced Concepts in Pain Control  
0.5 Semester Credit Hour  
All aspects of pain control are reviewed in this course. Emphasis is placed on the preanesthetic evaluation of the dental patient and sedation via oral medication and parenteral routes (intramuscular and intravenous). General anesthetic techniques also are discussed.

PEDO 7041  Pediatric Dentistry  
1.0 Semester Credit Hour  
This course covers development of the dentition, preventive and interceptive orthodontics, trauma and pulp therapy in primary teeth, pediatric restorative dentistry, periodontics, pediatric oral pathology and surgery, preventive dentistry, behavior management, and special problems in children.
PROS 7091  Pediatric Dentistry Clinic
2.0 Semester Credit Hours
Clinical experience with child patients gives students the opportunity to gain clinical judgement and proficiency while practicing comprehensive dentistry for children. Areas of competency include prevention, examination, diagnosis and treatment planning, local anesthesia, operative dentistry, pulpal therapy, oral injuries, oral surgery, preventive and interceptive orthodontics, behavior management, maintenance care, and periodontics.

PERI 7059  Implantology
1.0 Semester Credit Hour
Through lecture sessions, this introductory course offers students an opportunity to obtain both background and knowledge regarding accepted dental implant systems.

PERI 7081  Periodontics
1.5 Semester Credit Hours
An expansion of the foundation presented in the sophomore year. Surgical treatment planning, rationale, techniques, and wound healing are emphasized. A three-hour surgical laboratory exercise is included. Periodontal interrelationships with prosthodontics, endodontics, and orthodontics are examined in case presentation formats with student participation.

PERI 7082  Periodontics Clinic
4.0 Semester Credit Hours
The management of patients with gingivitis and adult periodontitis is the focus. Emphasis includes periodontal evaluation and diagnosis, incorporation of periodontal therapy in a comprehensive treatment plan, delivery of initial periodontal therapy, periodontal reevaluation, and maintenance of the treated patient. Students have the opportunity to perfect manual skills in periodontal examination, in scaling of teeth, and in root planing. In addition, they are given the opportunity to demonstrate their ability to analyze information and synthesize plans of therapy.

PROS 7018  Fixed Prosthodontics
1.0 Semester Credit Hour
This course is designed to be adjunct to and to complement the preclinical course so that the student correlates previous instruction in the clinical care of patients in need of crowns and/or fixed partial dentures.

PROS 7019  Fixed Prosthodontics Clinic
4.5 Semester Credit Hours
This clinical course consists of diagnosis and treatment planning, instruction in making complete and partial veneer crown preparations and modifications, management of supportive tissues, provision of adequate pain control for restorative procedures, fabrication and insertion of provisional as well as cast restorations, and instruction to patients in the care and maintenance of restorations.

PROS 7091  Removable Partial Denture Prosthodontics
1.0 Semester Credit Hour
This didactic course is designed to acquaint the student with a variety of approaches that may be used in treating the partially edentulous mouth. Lectures cover critical steps in treatment of the partially edentulous patient, stabilization of periodontically weakened teeth, intracoronal and other attachments used in partial denture construction, swinglock partial dentures, removable partial overdentures, and cancer therapy as it relates to prosthodontic treatment.

PROS 7092  Removable Partial Denture
Prosthodontics Clinic
1.5 Semester Credit Hours
A clinical experience designed to place continued emphasis on diagnosis, treatment planning, design principles, mouth preparation, and dental laboratory coordination. The student is given the opportunity to correlate biological and mechanical information in clinical care of patients requiring removable partial dentures. The student is required to complete treatment for one partial denture patient during the junior year.

PROS 7095  Complete Denture Prosthodontics Lecture
1.0 Semester Credit Hour
This course offers a series of lectures designed to present more sophisticated concepts in the prosthodontic treatment of edentulous and partially edentulous patients not included in previous courses. Lecture topics include preparation of the tissues for dentures, complete denture esthetics, occlusal systems for complete dentures, single complete dentures, immediate dentures, overdentures, maintenance care for the complete denture patient, and relining of dentures.

RESD 7003  Dental Auxiliary Utilization
1.0 Semester Credit Hour
This is a clinical course presented in a one-on-one type format. The student is assigned to a trained chairside dental assistant for the appropriate clinical period and performs restorative dental procedures for her/his own patients or Team patients. Students practice the implementation of four-handed dentistry and the effective utilization of the skills of experienced chairside dental assistants in an efficient, low-stress clinical setting. There is a one-hour general lecture at the beginning of the course for the entire class and assigned clinical period rotations for orientation. Thereafter, student assignments for each period are monitored by each Team.

RESD 7010  Operative Dentistry
1.5 Semester Credit Hours
A series of lectures designed to present more sophisticated didactic material in areas not included in the first and second year preclinical courses. This course serves as a forum for discussion of individual clinical problems and their solutions which are of interest to the class as a whole.

RESD 7011  Operative Dentistry Clinic
4.5 Semester Credit Hours
Students are given the opportunity to commence the clinical practice of operative dentistry. Each student is expected to achieve competency in the restoration of teeth with various restorative materials. Students’ application of knowledge of proper patient management is assessed.
Basic principles of occlusion presented in preclinical courses are reinforced and applied to clinical restorative dentistry, treatment for masticatory dysfunction, and comprehensive treatment of patients.

Clinical techniques including mounting of diagnostic casts, occlusal analysis, fabrication and adjustment of occlusal bite-plane splints, and occlusal correction of the natural dentition are performed.

The course examines the subtle and individual issues of dental esthetics and addresses facial contours, tooth arrangement, individual tooth contours, and tooth shade. The laboratory phase emphasizes the principles of dental esthetics during the fabrication of a porcelain laminate veneer restoration.
## The Senior Year

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<td>x</td>
<td></td>
<td>0.5</td>
</tr>
<tr>
<td>PATH 8023</td>
<td>Oral Pathology</td>
<td>x</td>
<td></td>
<td>2.0</td>
</tr>
<tr>
<td>PERI 8015</td>
<td>Periodontics</td>
<td>x</td>
<td></td>
<td>0.5</td>
</tr>
<tr>
<td>PHAR 8009</td>
<td>Pharmacotherapy</td>
<td>x</td>
<td></td>
<td>1.0</td>
</tr>
<tr>
<td>RESD 8013</td>
<td>TM Disorders</td>
<td>x</td>
<td></td>
<td>1.0</td>
</tr>
<tr>
<td>RESD 8051</td>
<td>Senior Esthetic Dentistry</td>
<td>x</td>
<td></td>
<td>0.5</td>
</tr>
</tbody>
</table>

* x = semester(s) presented

* A single grade at the end of the year is given for courses which extend through both semesters.

### Course Descriptions

#### COMD 8014  Oral Health Care Systems

**1.0 Semester Credit Hour**

A series of lectures and panel discussions introduce students to the structure as well as methods of financing dental care. Concepts of both traditional and recently evolved forms of dental practice also are discussed.

#### COMD 8031  Professional Ethics

**1.0 Semester Credit Hour**

This course emphasizes the application of ethical theory and principles in relation to professional codes or oaths, models of professionalism, clinical decision making, analysis of ethical dilemmas, resource allocation, whistle blowing, and fair business practices in dentistry.

#### COMD 8032  Jurisprudence

**0.5 Semester Credit Hour**

An in-depth review of the Texas Dental Practice Act and the Rules and Regulations of the Texas State Board of Dental Examiners will be presented as preparation for the Dental Jurisprudence examination given by the Board. General review of the interface of the law and dental practice including dental torts, malpractice, partnerships, insurance, record keeping, and other related legal issues are presented.

#### DIAG 8041  Geriatrics

**1.0 Semester Credit Hour**

Lectures and seminars emphasizing dental management of the geriatric patient cover such topics as normal aging, treatment planning, pharmacologic considerations, management and communication techniques, dementias, dentistry for nursing home and home-bound elderly, and clinical care.

#### ENDO 8043  Endodontics

**0.5 Semester Credit Hour**

This course is comprised of lectures designed to aid the student in evaluation and selection of endodontic cases to be treated in a general practice.

#### GEND 8026  Practice Administration

**2.5 Semester Credit Hours**

A series of lectures dealing with the business aspects of conducting a practice. Consideration of establishing and administering a practice, estate planning, bookkeeping methods, banking, marketing, management and utilization of personnel, and completion of a prospectus and office design project also are presented.

#### GEND 8032  Hospital Dentistry

**1.0 Semester Credit Hour**

In this one-week hospital rotation, students are given the opportunity to participate in the diagnosis and treatment of medically compromised patients on both an inpatient and outpatient basis. Students have the opportunity to participate during 36 hours of scheduled curricular time and after hours.

#### GEND 8075  Clinical Practice Management

**2.0 Semester Credit Hours**

A combination of didactic presentations and clinical experiences designed to emphasize factors in private practice which influence the professional, financial, and personal success of the dentist’s practice. A team approach in utilizing a chairside dental assistant, appointment coordinator, and dental hygienist facilitates a realistic approach to private practice.
GEND 8077  General Dentistry Clinic
26.5 Semester Credit Hours
Clinical experience for senior students under supervision of the Department of General Dentistry emphasizes comprehensive patient care in an atmosphere that closely simulates the private practice environment. Providing students an opportunity to accomplish procedures from each discipline of dentistry is the goal; therefore, students receive instruction from a faculty of general dentists. Various specialty departments provide didactic material, rotations in specialty clinics, and consultation. Senior Seminars, conducted by the Department of General Dentistry, entail lectures, problem-solving sessions, and presentations of selected cases designed to enhance the students’ knowledge of comprehensive clinical dentistry.

GEND 8078  General Dentistry Seminar
2.0 Semester Credit Hours
This seminar presents topics relevant to clinical practice including application and selection of dental materials, an overview of dental equipment, and clinical techniques. It is intended to reinforce philosophies presented by the specialty disciplines, to provide the opportunity to discuss dental topics of current interest, and to promote dialogue between students and faculty.

INTD 8015  Case Conferences
1.0 Semester Credit Hour
A continuation of a series of conferences in each year of dental studies designed to enhance interaction between the basic and clinical sciences and to promote problem-solving approaches. Senior Conferences accentuate the direct applicability of basic science information to the competent practice of clinical dentistry and offer students an opportunity to practice problem-solving techniques.

OSUR 8010  Implantology
0.5 Semester Credit Hour
This course utilizes both traditional lecture format and small group, problem-solving sessions for the presentation and discussion of advanced concepts in dental implantology.

OSUR 8054  Oral, Maxillofacial & Reconstructive Surgery
0.5 Semester Credit Hour
This course’s content includes the management of the acutely injured patient, presurgical evaluation and treatment modalities used in the management of maxillofacial trauma, soft tissue trauma and its management, the diagnosis and treatment of dentofacial deformities, surgical reconstruction, and an overview of facial cosmetic surgery.

PATH 8023  Oral Pathology
2.0 Semester Credit Hours
A didactic course emphasizing refinement of diagnostic skills and the use of the clinical findings as an aid in diagnosis. Clinical or simulated clinical cases are presented and discussed with exercises in differential diagnosis.

PERI 8015  Periodontics
0.5 Semester Credit Hour
Informal roundtable discussions in this course present all aspects of periodontics with emphasis on its relation to other disciplines of dentistry and their mutual dependency. This experience is devoted to clinical pursuits and the management of increasingly complex cases.

PHAR 8009  Pharmacotherapeutics
1.0 Semester Credit Hour
The emphasis of this course is on understanding the rationale, indications, and contraindications for prescribing pharmacologic agents in dentistry. Consideration of the pharmacologic agents that the patient may be taking at the time of the dental visit is emphasized.

RESD 8013  TM Disorders
1.0 Semester Credit Hour
A course designed to provide students with a comprehensive approach to the diagnosis and sequential management of patients with temporomandibular disorders.

RESD 8051  Senior Esthetic Dentistry
0.5 Semester Credit Hour
This course is designed to present available alternatives in esthetic dentistry, indication and clinical applications for each alternative, new materials designed for the concepts of esthetic dentistry, and appropriate methods of patient communication and patient management. Emphasis will be placed on clinical applications, efficacy of materials, precise communication with the laboratory concerning veneer shade information, and methods of doing chairside color modifications.

Junior Clinic Rotations
All junior dental students enhance their clinical experiences by participating in several Dental School and off-campus clinical rotations including the following:

Pediatric Dentistry Clinic (dentistry for children)
on campus
University Hospital Downtown (oral surgery)off campus
Oral Surgery
Third floor, Oral Surgery Clinic
Screening (examination of new patients)
Screening Clinic, second floor
Prosthodontics (patients needing complete dentures) Third Floor Clinic
Health Education
off campus at schools
Dental Auxiliary Utilization (working with dental assistants)
Fourth Floor Clinic

Senior Clinical Rotations
All senior dental students enhance their clinical experiences by participating in several Dental School and off-campus clinical rotations including the following:

Pediatric Dentistry Clinic (dentistry for children)
on campus
University Hospital Downtown (oral surgery)off campus
Oral Surgery
Third floor, Oral Surgery Clinic
Screening (examination of new patients)
Screening Clinic, second floor
Primary Care (care of dental emergencies)
Primary Care Clinic, second floor
Simulated Private Practice (dental practice in a simulated private practice environment)
Fourth floor SPP Clinic
Hospital Dentistry (one week experience treating ill and emergency patients in a hospital environment)
University Hospital
Mobile Dental Van
off campus at schools

Junior and Senior Electives
A series of elective courses are offered each year for junior and senior students. Although elective courses are not required, successful completion results in a transcript entry. Only graded elective courses accrue credit hours. Some courses have limited enrollments. Current electives are listed below; however, offerings vary each year:

Advanced Prosthodontics
Advanced Cardiac Life Support (ACLS) Preparatory Course
American Cancer Society, San Antonio Metro Unit
Clinical Endodontic Problem Solving
Community Clinical Rotation
Computers in Dentistry
Dental Photography
Endodontics
Exciting, Eclectic Orthodontic Literature Review
Experience in Clinical Teaching
Forensic Dentistry
Geriatric Dentistry
Hospital Pediatric Dentistry
Multimedia in Teaching/Learning
Oral Histopathology
Oral & Maxillofacial Surgery Dentoalveolar Surgery
Panoramic Radiography, Other Extraoral Radiographic Techniques
Preclinical Orthodontic Techniques
Private Practice Externship Program
Selected Topics in Head & Neck Anatomy
Supervised Teaching in Prosthodontics
Table Clinics
Single Stage/Solid Implant Elective
Special Teaching Elective—Teacher Training
Special Teaching Elective—Teaching Experience
Special Teaching Elective—Project Summary & Evaluation

Summer Electives
A series of elective courses are offered during the summer break to students advancing sophomore, junior or senior year. Many of the summer elective programs are off-campus and have limited enrollment. Successful completion results in a transcript entry. Current electives are listed below; however, offerings vary each year:

American Student Association/NHSC/Health Promotion/Disease Prevention
Basic Aspects of Immunology and Microbiology
Biochemistry Research
Colorado Migrant Health Program
Commissioned Officer Student Training and Extern Program Clinical Assignment - COSTEP
Community Dentistry Research Project
Composite Inlay/Onlay Systems
Comprehensive Dental Clinical Diagnosis and Treatment Rotation
Computers in Dentistry
Endodontic Summer Elective
General Practice Dental Emergency Care (DECC)
Hospital Dentistry Externship
Hospital Dentistry: Freshman and Sophomore Elective
Implantology: Prostodontic and Maintenance Elective
Intravenous Sedation
Neurosurgery Testing/Human Behavior
Oral and Maxillofacial Surgery Externship
Orthodontic Summer Clinic
Pediatric Dentistry Clinical Externship Program
Personal Financial Planning for the Dental Student
Pharmacology Research
Preclinical Operative Dentistry Skills Maintenance Course
Predoctoral Implantology: Comprehensive Elective
Simulated Private Practice Clinic Elective
Sports Mouthguards
Summer Clinical Elective
Summer Clinical/Community Externship Program

Clerkships
Advanced General Practice Clerkship
Anatomic/Surgical Pathology Clerkship
Continuing Dental Education Clerkship
Dental Diagnostic Science Diagnostic Image Construction
Endodontics
Exciting, Eclectic Orthodontic Literature Review
Gross Anatomy Teaching: The Head and Neck
Gross Anatomy Teaching: The Trunk
Honors Program Selective Course
Hospital Pediatric Dentistry
Research in Oral Surgery/Orthodontics
Special Program Clerkship
Supervised Teaching in Periodontics
Supervised Teaching in Prosthodontics
Advanced Dental Education Programs

Postdoctoral dental studies at The University of Texas Health Science Center at San Antonio consist of specialty certificate programs, graduate degree programs, and residencies. The combined resources of the Dental School, the Medical School, the Graduate School of Biomedical Sciences and affiliated patient care institutions in the community provide opportunities for flexibility in offerings in order to meet the demands of today’s dental practitioners.

Certificate and Degree Programs

The certificate and master’s degree programs are directed toward providing opportunities for the development of well-trained clinicians, competent in providing broad spectrum care, and teachers with a comprehensive background of clinical experience, current basic science knowledge relevant to dentistry, and an understanding of research methodology. Certificate programs are administered by the Dental School; master of science and Ph.D. degrees are granted by the Graduate School of Biomedical Sciences. Master’s degree and certificate programs are offered in Dental Diagnostic Science, Endodontics, Prosthodontics, and Periodontics. A certificate program only is available in Pediatric Dentistry; however, a master’s degree option for Pediatric Dentistry students is available in basic sciences and public health.

Program lengths vary: Prosthodontics and Periodontics programs (Periodontics requires a master’s degree) require three years; Dental Diagnostic Science certificate program requires 30 months, plus an additional six months for the master’s degree; Pediatric Dentistry and Endodontics certificate programs run two years, with an additional six months required for the master’s degree in Endodontics.

<table>
<thead>
<tr>
<th>Program</th>
<th>Certificate</th>
<th>Master’s</th>
<th>Length</th>
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<tbody>
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<td>Dental Diagnostic Science</td>
<td>X</td>
<td></td>
<td>30 mos.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>X</td>
<td>36 mos.</td>
</tr>
<tr>
<td>Endodontics</td>
<td>X</td>
<td></td>
<td>24 mos.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>X</td>
<td>30 mos.</td>
</tr>
<tr>
<td>Pediatric Dentistry</td>
<td>X</td>
<td></td>
<td>24 mos.</td>
</tr>
<tr>
<td>Periodontics</td>
<td>X</td>
<td>X</td>
<td>36 mos.</td>
</tr>
<tr>
<td>Prosthodontics</td>
<td>X</td>
<td>X</td>
<td>36 mos.</td>
</tr>
</tbody>
</table>

Residency Training

The Health Science Center and associated hospitals offer residency training programs which include an Advanced Education in General Dentistry Program, a General Practice Residency, an Oral & Maxillofacial Surgery Residency, and a Dental Public Health Residency. These programs focus on providing educational opportunities by maximizing patient care activities. (See “Associated Programs.”)

Advanced Education in General Dentistry

The AEGD certificate program presents advanced clinical techniques and experiences and expands clinical training with significant didactic contributions. Diagnosis and treatment planning of complex and comprehensive cases and the promotion of clinical skills and techniques are emphasized. The program is from one to two years in length.

Dental Public Health

The Department of Community Dentistry offers a one-year, full-time or a two-year, part-time Residency in Dental Public Health. The program is designed to allow dentists with the Master of Public Health degree or its equivalent to complete the educational requirements for Board Certification as a recognized specialist in Dental Public Health.

Oral and Maxillofacial Surgery Residency

A program of study for dentists in Oral and Maxillofacial Surgery is offered at UTHSCSA. The Medical Program combines formal medical education leading to an M.D. degree with clinical training. This is a six-year course of study with openings for two positions per year. Individuals accepted into the residency program are automatically accepted into the second-year class of the Medical School. (The MCAT is not required.)

General Practice Residency

The General Practice Residency Program is designed to prepare graduate dentists to become competent general practitioners, capable of providing comprehensive, state-of-the-art dental care. Dental care for medically compromised patients serves as the framework for clinical training. The program is from one to two years in length. Research opportunities are available.

Orthodontics

The Department of Orthodontics offers a 33-month residency for advanced training in orthodontics and dentofacial orthopedics. This program is designed to offer a broad spectrum of clinical and didactic experience in the field. The emphasis of the program is placed on strong clinical and scholarly skills in preparation of the resident for an academic career. Prior to the student’s completion of the program, a Master of Science or Ph.D. program must be completed to accompany the certificate of residency training. The training program will meet the formal requirements for eligibility to take the phase II and phase III portion of the American Board of Orthodontics.

Admission

Certificate Programs

Students are admitted to certificate programs through registration as postdoctoral certificate students in the Dental School. To be eligible for admission, individuals must have earned a D.D.S. or D.M.D. degree prior to
matriculation and must present acceptable academic records and references. A personal interview is recommended.

Graduates of dental schools which have not been accredited by the Commission on Dental Accreditation must take the Graduate Record Examination Aptitude Test prior to application and achieve a minimum combined score of 1,000 on the verbal and quantitative portions.

Applicants for whom English is not the native language are required to submit scores from the Test of English as a Foreign Language (TOEFL). A minimum score of 550 is required.

At the conclusion of the first year in a certificate program, students have the option of applying to enter the degree program or of continuing in the certificate program.

**Master’s Degree Programs**

Admission to the degree programs in Periodontics, Prosthodontics, Endodontics, or Dental Diagnostic Science from the certificate program in the same specialty is dependent upon satisfactory scholastic performance during the first year of the certificate program, a minimum grade average of B in postdoctoral courses, faculty recommendations, a minimum score of 1,000 on the verbal and quantitative portions of the GRE Aptitude Test*, and approval by the Graduate Faculty Council of the Graduate School of Biomedical Sciences.

**Application Procedures**

Application forms for postdoctoral certificate programs and appropriate dates for the return of completed forms and required supplementary information may be obtained from the UTHSCSA Website at [http://dental.uthscsa.edu](http://dental.uthscsa.edu), or by writing:

UTHSCSA
Dental School
Associate Dean for Student Affairs
7703 Floyd Curl Dr.
San Antonio, Texas 78229-3900

**General Policies**

**Degree Programs**

Postdoctoral dental students who enter the Graduate School of Biomedical Sciences' degree programs after the first year of study in one of the certificate programs are subject to policies and procedures of the Graduate School of Biomedical Sciences as well as general regulations and requirements of The University of Texas Health Science Center at San Antonio. Information regarding admission, registration, grading, continuation, etc., is presented in the Graduate School of Biomedical Sciences section of this Catalog.

**Certificate Programs**

Postdoctoral dental students in certificate programs are subject to general policies of the Dental School and the Health Science Center as well as those explained below.

**Registration**

Students must register and pay tuition and fees on the date of official registration shown in the “General Information” section of this Catalog. A late registration fee of $25 will be assessed students who register after the official registration period closes.

**Grading**

A letter grading system is used in the certificate programs. To calculate a grade point average, grade points are assigned to letter grades.

- **A** = 4 points (above average postgraduate work)
- **B** = 3 points (average postgraduate work)
- **C** = 2 points (below average postgraduate work)
- **D** = 1 point (failing postgraduate work)
- **F** = 0 points (failing postgraduate work)

Grades of **D** and **F** are not acceptable for postgraduate credit and must be upgraded to an acceptable level. Course directors may require the student to repeat a failed course during the next period that the course is offered. Grades for repeated courses will be assigned using the grading system outlined previously. Course directors may also permit abbreviated, remedial instruction aimed at raising student competence in specific areas for a failed course. A grade of **C** will be given for successful remediation. Grades earned in repeated or remediated courses will be substituted for the original grade in the computation of the grade point average.

The grades **S** (satisfactory), **U** (unsatisfactory), or **H** (Honors) are given for the following courses:

- Seminar
- Literature Searching
- Supervised Teaching
- Research

S, U, and H grades are not included in the computation of the grade point average; however, a grade of U must be upgraded to an S either through remediation or repetition of the course.

Other symbols used in reporting the standing of students in their classes are: **WP** (withdrew passing) and **WF** (withdrew failing); **Q** (course dropped while receiving a passing grade—no penalty); and **I** (incomplete). An **I** is used only to report cases in which the student has not completed all of the assignments and/or examinations before the conclusion of the course. Unless the student has been granted a leave of absence, all work must be completed within one year in order for the symbol **I** to be converted into a letter grade by the instructor. If the work is not completed within one year, the letter grade **F** will be assigned.

**Waiver of Courses and Advanced Standing**

Postgraduate students may apply for waiver of a course requirement or for advanced standing in a course.

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*Scores on GRE tests taken more than five years prior to the date of application are not acceptable.*
Permission may be granted on an individual basis with a recommendation from the program director and the course director, subject to the approval of the departmental Committee on Postdoctoral Studies and the Associate Dean for Student Affairs.

Continuation
Continuation in the postgraduate certificate program is dependent upon the following:

- Postgraduate students are required to satisfactorily demonstrate clinical competence as determined by the program director and the Committee on Postdoctoral Studies. Clinical competence will include, but not be limited to: (a) professional demeanor, including patient, student, and faculty relationships; (b) professional appearance; and (c) application and demonstration of clinical operating skills.
- Postgraduate students will be monitored on a regular basis by the departmental Committee on Postdoctoral Studies. Students will be apprised in writing of any deficiency and, when indicated, placed on probation by the Dean. In such cases that the Committee on Postdoctoral Studies determines that improvement has not been achieved in a particular area cited, dismissal will be recommended.

Probation and Dismissal
A student whose average falls below B (3.0) will be placed on academic probation by the Dean upon recommendation of the departmental Committee on Postdoctoral Studies of the appropriate program. Additionally, a student will be placed on academic probation for any one of the following: a final grade of F, D, or U during any one grading period.

A student placed on academic probation will be given written notification by the Dean of such status. This notification will serve as an official warning to the student that her or his academic performance is below standard and continuation in the postgraduate program is in jeopardy. Upon the student’s successful correction of all D, F, and U grades, he or she will be removed from academic probation. A student will remain on probation for as long as her or his cumulative GPA is below 3.0. While on probation, a student must maintain a B average in those courses for which he or she is registered or be considered for dismissal by the departmental Committee on Postdoctoral Studies.

A student will be subject to dismissal without a probationary period if he or she receives a final grade of D or F for 4 (four) or more credit hours of required course work during a single grading period. Academic dismissal will be recommended by the Committee on Postdoctoral Studies for consideration by the Advanced Education Committee. The student may request permission to appear before the Advanced Education Committee to present her or his views. The Advanced Education Committee will transmit recommendations for dismissal through the Associate Dean for Student Affairs to the Dean. Students may appeal academic dismissal to the Dental Dean. Procedural appeal may be made to the President in accordance with Health Science Center policy.

Failure of the student to demonstrate the intellectual, ethical, and behavioral attributes prerequisite to meeting the responsibilities for patient care are grounds for dismissal from the postgraduate program.

Leave of Absence
Permission for a leave of absence from a postgraduate program for a maximum period of one year may be granted by the Dean upon the recommendation of the Advanced Education Committee. Such permission will be granted only for extenuating circumstances and indicates the student will be allowed to return to the program within the one-year limit.

The student must complete a Request for Leave of Absence form, available in the Dean’s office, and submit the completed form to the Chairman of the departmental Committee on Postdoctoral Studies. The form is then forwarded with appropriate endorsements to the Advanced Education Committee, the Associate Dean for Student Affairs, and the Dean for approval. The grading symbol I (incomplete) will be recorded for each course not completed, and the student will be required to complete these courses as soon as they are offered after the student’s return.

Withdrawal
Permission to withdraw from a postgraduate program may be granted by the Associate Dean for Student Affairs upon written request by the student and upon recommendation of the departmental Committee on Postdoctoral Studies of the student’s program. In the case of withdrawal before the end of the term (and thus the dropping of all courses), the grading symbol WP or WF will be recorded for each course not completed, depending upon the student’s standing on the last day of enrollment. In the case of a student’s withdrawal at the end of the term, the appropriate grading symbol will be recorded for each course completed.

An application for readmission by a student who has withdrawn is subject to the same requirements, procedures, and acceptance considerations that apply to first-time applicants.

Graduation
Certificates will be awarded upon the student’s successful completion of the prescribed curriculum with a 3.0 minimum grade point average, recommendation of the program director to the Associate Dean for Student Affairs and certification by the Dean to the President.

M.D. degrees are awarded through the UTHSCSA Medical School at the end of the third year of the OMS (Oral & Maxillofacial Surgery) program.
Financial Information
Tuition information for resident and nonresident students enrolled in postdoctoral certificate and degree programs, fee information, and information about other expenses is outlined in the “General Information” section of this Catalog.

Compensation
Postdoctoral students may receive stipends on a year-to-year basis, depending upon funds available. Program directors will provide current information.

Curriculum
The curriculum for the certificate programs is designed to give students the opportunity to develop clinical judgment and skills necessary to provide comprehensive patient care, broader in scope and greater in depth than that offered by undergraduate programs. Biomedical sciences relevant to each specialty are integrated to facilitate correlation of biological, pathological, behavioral, and clinical disciplines.

The offerings of each program are designed to meet the formal education requirements for eligibility to take the certifying examinations of the American Board of Periodontics, American Board of Endodontics, American Board of Pediatric Dentistry, American Board of Prosthodontics, American Board of Oral Medicine, and American Board of Oral and Maxillofacial Radiology. The faculty is composed of members of the Dental School clinical and basic science teaching staffs.

The curriculum for the master’s programs is also provided in this section. For the degree programs in Dental Diagnostic Science, Periodontics, Endodontics, and Prosthodontics the curriculum for the first two years is identical to that of the certificate program with, in some cases, additional teaching and research. An additional 6 (six) months or longer are required for graduate degree students who must also complete a thesis.

Multidisciplinary Courses
The five certificate programs have in common many basic science courses as well as some dental courses. Descriptions of multidisciplinary courses follow the outlines of the five programs.

Dental Diagnostic Science
Certificate Program

<table>
<thead>
<tr>
<th>Credit Hours</th>
</tr>
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<tbody>
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<td>FIRST YEAR</td>
</tr>
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**Summer**
- **DIAG 5012** Practicum in Clinical Radiology 2.0
- **DIAG 5091** Diagnostic Science Seminar 0.5
- **DIAG 5017** Literature Review 1.0
- **DIAG 5044** Radiation Physics Lab 0.5
- **DIAG 5045** Radiation Physics 1.0
- **ORTH 5094** Research Methodology I 1.5

**Fall**
- **DIAG 5012** Practicum in Clinical Radiology 2.0
- **DIAG 5018** Practicum in Oral Medicine 2.0
- **PATH 5121** Biostatistics 1.0
- **PATH 5035** Oral Pathology 2.0
- **INTD 5020** Dental Biomedical Core Course 4.0
- **DIAG 5045** Radiation Physics 1.0
- **DIAG 5044** Radiation Physics Lab 0.5
- **DIAG 5092** Diagnostic Science Seminar 1.0
- **DIAG 5017** Literature Review 1.0
- **DIAG 5067** Practical Infection Control 3.0

**Spring**
- **DIAG 5012** Practicum in Clinical Radiology 3.0
- **DIAG 5018** Practicum in Oral Medicine 2.0
- **DIAG 5070** Supervised Teaching 2.0
- **DIAG 5093** Diagnostic Science Seminar 1.0
- **DIAG 5017** Literature Review 1.0
- **INTD 5021** Dental Biomedical Core Course 1.0
- **DIAG 5181** Principles in Forensic Odontology 1.0
- **PATH 5030** Oral Histopathology 1.0

**SECOND YEAR**

**Summer**
- **DIAG 6075** Practicum in Clinical Radiology 3.0
- **DIAG 6022** Practicum in Oral Medicine 2.0
- **DIAG 6090** Diagnostic Science Seminar 1.0
- **DIAG 6017** Literature Review 1.0

**Fall**
- **DIAG 6075** Practicum in Clinical Radiology 4.0
- **DIAG 6022** Practicum in Oral Medicine 2.0
- **DIAG 6071** Supervised Teaching 2.0

*Multidisciplinary course*
**Advanced Dental Education Programs — Dental School**

**Master of Science Degree Program**

The curriculum for the first two and one-half years of the master’s degree program is identical to that of the certificate program.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
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<td>Diagnostic Science Seminar</td>
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<tr>
<td>DIAG 6135</td>
<td>Clinical Case Conference I</td>
<td>1.0</td>
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<tr>
<td>DIAG 6017</td>
<td>Literature Review</td>
<td>1.0</td>
</tr>
<tr>
<td>DIAG 6016</td>
<td>The Essence of Pharmacology for Dental Practitioners</td>
<td>2.0</td>
</tr>
<tr>
<td>DIAG 6041</td>
<td>Basic Radiation Biology</td>
<td>1.0</td>
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</table>

**Total Credits for Certificate Program** 95.0

**Master of Science Degree Program**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>DIAG 6008</td>
<td>Orofacial Pain</td>
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<tr>
<td>DIAG 6016</td>
<td>The Essence of Pharmacology for Dental Practitioners</td>
<td>2.0</td>
</tr>
<tr>
<td>DIAG 6075</td>
<td>Practicum in Clinical Radiology</td>
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</tr>
<tr>
<td>DIAG 6022</td>
<td>Practicum in Oral Medicine</td>
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<tr>
<td>DIAG 6070</td>
<td>Supervised Teaching</td>
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<tr>
<td>DIAG 6092</td>
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<tr>
<td>DIAG 6135</td>
<td>Clinical Case Conference II</td>
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<tr>
<td>DIAG 6043</td>
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**Total Credits for Master of Science Degree Program** 106.0

**Elective Courses (based on availability)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>DIAG 6009</td>
<td>Noninfectious Diseases of the Oral Mucosa</td>
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</tr>
<tr>
<td>DIAG 6019</td>
<td>Chemosensory Disorders and Salivary Gland Dysfunction</td>
<td>2.0</td>
</tr>
<tr>
<td>DIAG 6044</td>
<td>Clinical Medicine</td>
<td>4.0</td>
</tr>
<tr>
<td>DIAG 6083</td>
<td>Forensic Odontology Lab</td>
<td>1.0</td>
</tr>
<tr>
<td>DIAG 6086</td>
<td>Forensic Dental Photography Lab</td>
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</tr>
<tr>
<td>DIAG 6060</td>
<td>Physical Anthropology</td>
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</tr>
<tr>
<td>DIAG 6087</td>
<td>Advanced Forensic Science Lab</td>
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</tr>
<tr>
<td>DIAG 6084</td>
<td>Advanced Forensic variable Odontology Lab</td>
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<tr>
<td>DIAG 6085</td>
<td>Forensic Pathology</td>
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<td>DIAG 6061</td>
<td>Forensic Anthropology</td>
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<td>DIAG 5014</td>
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<tr>
<td>SELC 7102</td>
<td>Infectious Diseases of the Oral Mucosa</td>
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<td>DIAG 6005</td>
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<td>DIAG 6006</td>
<td>Clinical Pathology Conference</td>
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<tr>
<td>INTD 6070</td>
<td>Teaching Skills</td>
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</tr>
</tbody>
</table>

**Course Descriptions**

Courses unique to the program in Dental Diagnostic Science are listed below. Offerings which are common to one or more programs are described under “Multidisciplinary Courses.”

**DIAG 5012/6075 Practicum in Clinical Radiology**

**Variable Semester Credit Hours**

This course will be offered during each semester of the three-year program. The practicum consists of clinical radiology service involving all aspects of Oral and Maxillofacial Radiology and didactic sessions introducing basic concepts of image interpretation and imaging techniques. Patients are seen in the Tertiary Care Radiology Clinic that provides radiology services to the Dental School and surrounding professionals on a referral basis. Proficiency level skills are required in the technical performance and interpretation of all the dental school-based imaging such as intraoral, panoramic and plane film radiography, and OMF tomography. Medical radiology rotations are designed to train the students to be competent.

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*Multidisciplinary course*
in interpretation of CT and MR images of the OMF region, and to be familiar in interpretation of ultrasonic and nuclear medicine images. Studies in image interpretation and normal radiographic anatomy will be emphasized during this course. During the three years of training, rotations are designed to train the student to become competent in the new OMF imaging techniques and procedures, such as planar and 3-dimensional CT image reformations, direct digital radiographic equipment and procedures, digital subtraction radiography and quantitative digital radiography procedures. The students also will have training in the conventional procedures of darkroom quality assurance and film processing.

**DIAG 5014 Physical Evaluation**  
*1.0 Semester Credit Hour*

The curriculum for physical evaluation includes didactic and clinical experience in obtaining and interpreting a patient history; extraoral and intraoral physical examination procedures; interpretation of the findings of the examination; obtaining and interpreting appropriate clinical laboratory examinations; communication with health care professionals, risk status assessment, and documentation.  

*(This course does not represent additional hours to the curriculum — the hours come from DIAG 6022.)*

**DIAG 5018/6022 Practicum in Oral Medicine**  
*2.0 Semester Credits Hours*

Practice in clinical skills required for diagnosis, management, and treatment of oral and perioral diseases, including such special procedures as sialography, cytological smearing, biopsy, and culture taking is offered. A comprehensive review of the conditions which the dentist may be called upon to diagnose and treat as the result of the physical examination of the patient is the focus of this course. Topics include extraoral findings such as general appearance of the hands, eyes, ears, nose and neck; intraoral findings such as lesions as in lip swelling or palatal swelling; and color changes, surface changes, and other problems such as pain and functional disorders.

**DIAG 5091/5092/5093/6090/6091/6093/6094/6095 Diagnostic Science Seminar Variable**

Presentations, reviews, and discussion of current cases from the Dental Diagnostic Science Clinic as well as cases of interest from the teaching file is the format for this course.

**DIAG 5017/6017 Literature Review**  
*1.0 Semester Credit Hour*

Articles from the dental, medical, and basic science literature are reviewed and critically evaluated. The purposes of this course are to maintain current awareness, review classic articles, learn use of information resources, and evaluate research methods.

**DIAG 5045 Radiation Physics**  
*1.0 Semester Credit Hour*

This course presents the fundamental principles of radiation physics as they apply to medical and dental diagnostic radiology. Topics include the nature and production of X-rays, interactions of X-rays with matter, the physics of films and intensifying screens, the nature of the radiographic image, fundamentals of radiation protection, principles of tomography, and panoramic radiography.

**DIAG 5044 Radiation Physics Lab**  
*0.5 Semester Credit Hour*

This laboratory is given in conjunction with DIAG 5045 Radiation Physics. Students will be given the opportunity to perform laboratory assignments designed to further their understanding of the practical applications of the principles of radiation physics.

**DIAG 5070/6071/6072 Supervised Teaching**  
*2.0 Semester Credit Hours*

Graduate students are assigned to the various clinics, laboratories, and classes for the opportunity to acquire experience in teaching undergraduate students in a variety of situations. Supervision and evaluation of teaching performance is provided by the graduate faculty.

**DIAG 6135 Clinical Case Conference I and II**  
*1.0 Semester Credit Hour*

Each student will be assigned one or more cases to cover in a written report and to present in conference. Over two semesters, weekly conferences will allow for a large variety of representative pathoses to be reviewed and discussed. Students will have the opportunity to correlate the historical, clinical, and radiographic findings in the formation of a differential diagnosis or a diagnostic impression.

**DIAG 5067 Practical Infection Control**  
*3.0 Semester Credit Hours*

This course is designed to familiarize the postdoctoral student and future infection control educator with the products, procedures, and concepts behind practical infection control in the dental setting. Each of the following areas of infection control will be discussed during this course: the infection control significance of selected screening, universal precautions, personal protection, instrument recirculation and sterilization, surface and equipment asepsis, regarding infection control in dentistry. After didactic presentation, the student will be given the opportunity to become actively involved in learning the material via problem solving and critical thinking.

**DIAG 5181 Principles in Forensic Odontology**  
*1.0 Semester Credit Hour*

A didactic course covering such topics as forensic photography, forensic radiology, dental identification, mass disaster techniques, bite mark analysis, child abuse, and courtroom protocol. Students will be encouraged to investigate specific areas in more detail. *(This course is required for the MS degree.)*

**DIAG 6008 Orofacial Pain**  
*2.0 Semester Credit Hours*

This course is designed to introduce the student to the field of orofacial pain. The course objectives include: introduction to orofacial pain, assessment of orofacial pain disorders, diagnostic classification of orofacial pain disorders, differential diagnosis and management of vascular intracranial disorders, differential diagnosis and management of neuralgias, nerve trunk pain and deafferentation pain, differential diagnosis and management of intraoral pain, differential diagnosis and management of temporomandibular disorders, and differential diagnosis and management of mental disorders.

**DIAG 6009 Noninfectious Diseases of the Oral Mucosa**  
*2.0 Semester Credit Hours*

This course is designed to discuss a selected group of diseases of the oral mucosa with the primary purpose of presenting diagnostic and therapeutic guidelines. The role of oral medicine specialists in the
care of noninfectious oral mucosal diseases, appropriate (e.g., timely and accurate) consultations/referral, definitive therapy, clinical review (e.g., the disease and/or side-effects of theory), disease prevention, and counseling of patients and relatives will be discussed.

**DIAG 6041 Basic Radiation Biology**  
1.0 Semester Credit Hour  
An introductory course in the basic concepts of radiation biology, this course is appropriate for dentists desiring an opportunity to gain additional knowledge of the biological effects of diagnostic and therapeutic levels of x-radiation. Concepts of designing an office for optimum radiation protection also are presented.

**DIAG 6043 Advanced Radiation Biology**  
1.0 Semester Credit Hour  
An in-depth study of radiation biology is presented, emphasizing such topics as radiation risk, dosimetry, theories of radiation damage, radiation hygiene and protection, and the effects of therapeutic levels of radiation on the oral tissues.

**DIAG 6016 The Essence of Pharmacology for Dental Practitioners**  
2.0 Semester Credit Hours  
This course is designed to discuss general principles of pharmacology as they relate to the clinical use of drugs and associated adverse drug events. It is based on the top 200 drugs dispensed by U.S. community pharmacies for the prevention, diagnosis, and/or treatment of disease.

**Electives**

**DIAG 6005 Clinical Pathology Conference**  
1.0 Semester Credit Hour  
Formal review of clinical, radiographic, and histopathologic presentations of various conditions affecting the head and neck area and the oral cavity, in particular, is presented. A variety of cases are presented for group discussion with a view toward obtaining a differential diagnosis.

**DIAG 6062 Advanced Forensic Anthropology Lab**  
0.5 Semester Credit Hour  
Practice in the application of laboratory skills in anthropology through the facilities of the Center for Archeological Research at The University of Texas at San Antonio, the U. S. Army Central Identification Laboratory in Hawaii, the Oklahoma State Medical Examiner’s Office, the Southwest Foundation for Biomedical Research, and other locations. Students are expected to develop selective skills related to their areas of interest within the field.

**DIAG 6084 Advanced Forensic Odontology Lab**  
Variable Credit Hours  
Advanced practice in the laboratory and field skills in forensic odontology in the areas of routine identifications, mass disaster preparedness and management, bite mark evidence and analysis, child abuse detection, and jurisprudence. Students are “on call” to do cases as needed and introduced to new and innovative teachings in the field. Students are allowed to develop selective skills related to their areas of interest.

**DIAG 6060 Physical Anthropology**  
1.0 Semester Credit Hour  
This lecture and laboratory course examines the morphology of the human cranial and postcranial skeleton, skeletal biology, osteogen-

**DIAG 6061 Forensic Anthropology**  
1.0 Semester Credit Hour  
A study of the application of basic anthropology to forensic situations is the focus of this course. Specific emphasis is placed on osteobiography, scene investigation, determination of the time of death, basic anthropologic variables of identification, individualization, and cause and manner of death.

**DIAG 6086 Forensic Dental Photography Lab**  
0.5 Semester Credit Hour  
This lecture and laboratory course is designed to acquaint the student with dental photography in the morgue setting, studio and darkroom procedures necessary for special photographic techniques, and the preparation of appropriate case exhibits for the courtroom.

**DIAG 6083 Forensic Odontology Lab**  
1.0 Semester Credit Hour  
Demonstration and application of information and principles are presented in this introductory course in laboratories of the Health Science Center and the Bexar County Medical Examiner’s Office. Successful completion of DIAG 50181 Principles in Forensic Odontology and this course will fulfill requirements for membership in the American Academy of Forensic Sciences.

**DIAG 6019 Chemosensory Disorders and Salivary Gland Dysfunction**  
2.0 Semester Credit Hours  
Chemosensory disorders affect in particular disproportionately a large segment of the elderly population, the fastest growing segment of the western industrialized nation. Also saliva plays a major role in the preservation and protection of the oral and pharyngeal tissues. When salivary gland function is altered, multiple stomatologic and systemic disorders can develop. This graduate level elective course is designed to make the graduate student (oral medicine) aware of the etiology, prevalence and mechanisms of normal and diseased chemosensation and salivary gland functions of the oral cavity. Its focus will be on the diagnosis and management of patients with taste, smell and salivary gland dysfunctions.

**SEL 7102 Infectious Diseases of the Oral Mucosa**  
0.0 Semester Credit Hours  
This course is designed to discuss a selected group of diseases of the oral mucosa with the primary purpose of presenting diagnostic and therapeutic guidelines. The role of oral medicine specialists in the recognition and care of infectious oral mucosal diseases, appropriate (e.g., timely and accurate) consultations/referral, definitive therapy, clinical review (e.g., the disease and/or side-effects of theory), disease prevention, and counseling of patients and relatives will be discussed.
Endodontics

Certificate Program

FIRST YEAR

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<tr>
<th>Credit Hours</th>
<th>Summer</th>
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<tr>
<td></td>
<td>ENDO 5080 Case Presentations I 0.5</td>
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<tr>
<td></td>
<td>ENDO 5020 Introduction to Advanced Endodontics 2.5</td>
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<tr>
<td></td>
<td>ENDO 5015 Dental Photography 0.5</td>
</tr>
<tr>
<td></td>
<td>ENDO 5073 Literature Review I 1.0</td>
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<tr>
<td></td>
<td>*GEND 5027 Pain Control &amp; Sedation 3.5</td>
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<td>*ORTH 5094 Research Methodology 1.5</td>
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<tr>
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<td></td>
<td>ENDO 5010 Clinical Endodontics I 2.5</td>
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<td>ENDO 5017 Clinical Seminar I 2.0</td>
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<td>*INTD 5020 Dental Biomedical Core Course 4.0</td>
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<td>*PROS 5050 Endosseous Dental Implants 1.5</td>
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<td>*DIAG 5050 Fundamentals of Dental Radiography 1.0</td>
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<td>*PATH 5035 Oral Pathology 2.0</td>
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SECOND YEAR

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<tr>
<td></td>
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<tr>
<td></td>
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<td>*DIAG 6016 The Essence of Pharmacology for Dental Practitioners 0.0</td>
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*Multidisciplinary course

Master’s Degree Program

THIRD YEAR

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</table>

Course Descriptions

Courses unique to the program in Endodontics are listed below. Offerings which are common to one or more programs are described under “Multidisciplinary Courses.”

ENDO 6052 Endodontic Surgical Anatomy
1.5 Semester Credit Hours

This course consists of a series of four four-hour seminar sessions devoted to an in-depth discussion of endodontic surgical anatomy, surgical indications and techniques, and wound healing. This is followed by twenty hours of laboratory during which human head and neck prosected specimens are covered to demonstrate pertinent anatomic structures and the students practice actual surgical procedures on anterior, premolar, and molar teeth in cadaver specimens.

ENDO 5015 Dental Photography
0.5 Semester Credit Hour

This course is designed to expose the student to the principles of effective dental photography. Students are given the opportunity to make clinical photographs which are critiqued in class.
ENDO 5020  Introduction to Advanced Endodontics
2.5 Semester Credit Hours
This course is a laboratory and lecture review of endodontic concepts and techniques starting at the basic level and progressing to the advanced. Various techniques of access preparation, chemomechanical canal preparation, and obturation will be taught. Students will have an opportunity to prepare and obturate the root canal system using a variety of techniques and materials. Procedures are performed under simulated clinical conditions in a mannequin. Following completion of obturation, students dissect and photograph tooth roots under a dissecting microscope to evaluate the effectiveness of the various canal preparation and obturation techniques.

ENDO 5073/5074/6073/6074/6075/6076
Literature Review I & II
Variable Credit Hours
These courses are designed to familiarize the student with pertinent articles (both topical and current) related to endodontics. The articles, selected from the dental, medical, and basic science literature, are assigned to the student to critically abstract and evaluate for research design, findings, and conclusions.

ENDO 5010/5011/6010/6011/6012/6013/6014
Clinical Endodontics I, II, & III
Variable Credit Hours
An extensive clinical experience in the broad spectrum of endodontic practice is offered on the graduate level. Each student has the opportunity to maintain a comprehensive endodontic practice under the supervision of the director and staff of the postdoctoral program in endodontics.

ENDO 5017/5018/6016/6017/6018/6019/6020
Clinical Seminar I, II, & III
Variable Credit Hours
These seminars provide the opportunity to discuss matters pertaining to clinical endodontics by exposing the student to a wide variety of clinical cases. The seminars provide information to give students the opportunity to become sophisticated diagnosticians and skillful clinicians. Students are provided the opportunity to achieve these goals through student case presentations, faculty case presentations, topical lectures by faculty, and consultant visits.

ENDO 6031/6032
Hospital Endodontics Rotation
1.0 Semester Credit Hour
Conducted at the Audie L. Murphy Memorial Veterans Affairs Hospital, this rotation consists of the diagnosis, treatment planning, and clinical treatment of endodontically involved teeth and supporting structures. This rotation provides the second-year postdoctoral endodontics student the opportunity to diagnose and treat endodontic problems on all types of inpatients and outpatients in the hospital setting.

ENDO 5080/5081/5082/6083/6084/6085
Endodontic Case Presentations I & II
Variable Credit Hours
These courses are designed to provide faculty evaluation of endodontic cases treated by students. Critical evaluation will be made of the diagnosis, treatment plan, and treatment methodology. Differential diagnosis will be considered along with alternate treatment plans, and treatment methods. Reasons for any complications will be determined, and methods for preventing them will be discussed. The need for post-treatment follow-up examinations will be determined. The positive feedback provided by these courses is intended to increase student confidence and competence.

ENDO 6071  Supervised Teaching II
1.0 Semester Credit Hour
The goal of this course is to teach the student how to be an effective teacher. This course involves the student in teaching a sophomore lecture and laboratory course where dental students receive their initial exposure to endodontics. The student is given the opportunity to be actively involved in laboratory supervision of a small group of sophomore students as they perform specific endodontic procedures on extracted teeth. The student functions as an instructor side by side with endodontic faculty members who observe and critique the student’s performance.

DIAG 6016  The Essence of Pharmacology for Dental Practitioners
2.0 Semester Credit Hours
This course is designed to discuss general principles of pharmacology as they relate to the clinical use of drugs and associated adverse drug events. It is based on the top 200 drugs dispensed by U.S. community pharmacies for the prevention, diagnosis, and/or treatment of disease.
# Pediatric Dentistry

## Certificate Program

<table>
<thead>
<tr>
<th>FIRST YEAR</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Summer</strong></td>
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<tr>
<td>PEDO 5026</td>
<td>Orthodontics I</td>
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<td>PEDO 5020</td>
<td>Pediatric Dentistry &amp; Orthodontics Clinic I</td>
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<tr>
<td>PEDO 5042</td>
<td>Pediatric Dentistry I</td>
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<td>PEDO 5027</td>
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<td>PEDO 5043</td>
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<td>PEDO 5028</td>
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<tr>
<td><strong>Summer</strong></td>
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<td>PEDO 6023</td>
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<td><strong>Fall</strong></td>
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<td>PEDO 6083</td>
<td>Investigative Project</td>
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<td>PEDO 6029</td>
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**Total Credits for the Certificate Program**: 69.5

## Course Descriptions

Courses unique to the program in Pediatric Dentistry are listed below. Offerings which are common to one or more programs are described under “Multidisciplinary Courses.”

**PEDO 5042** Pediatric Dentistry I  
**2.0 Semester Credit Hours**

This course comprises several seminar series and lectures on a variety of subjects pertinent to advanced pediatric dentistry. Included are conscious sedation, pulp therapy, traumatic dental injuries, cariology and prevention, periodontal problems, special patient care, infection control, restorative materials and techniques, radiographic principles and practice, and pediatric grand rounds.

**PEDO 5043** Pediatric Dentistry II  
**5.0 Semester Credit Hours**

This course is largely a continuation of lectures and seminars on the subject matter introduced in **PEDO 5042 Pediatric Dentistry I** but also adds case conferences and current literature seminars.

**PEDO 5044** Pediatric Dentistry III  
**6.0 Semester Credit Hours**

In part, this is a continuation of some lecture and seminar topics from **PEDO 5043 Pediatric Dentistry II**. In addition, the following subject matter will be presented: behavior management, psychosocial growth and development, pediatric oral pathology, advanced nutrition, craniofacial growth and development, antibiotics, and analgesics and sedatives.

**PEDO 6045** Pediatric Dentistry IV  
**6.0 Semester Credit Hours**

A continuation of the case conferences, current literature seminars, and pediatric grand rounds, this course also introduces practice management and topics in clinical genetics.

**PEDO 6146** Pediatric Dentistry V  
**5.0 Semester Credit Hours**

This course continues the case conferences, current literature seminars, and pediatric grand rounds of **PEDO 6045 Pediatric Dentistry IV**, adding craniofacial anomalies seminars.

**PEDO 5026** Orthodontics I  
**2.0 Semester Credit Hours**

This course comprises two seminar series in which orthodontic diagnosis and treatment principles for the primary and mixed dentitions are presented. Included also are laboratory technique exercises in which commonly used orthodontic appliances are constructed.

**PEDO 5027/5028/6029/6030** Orthodontics II, III, IV and V  
**Variable Credit Hours**

These seminars consist of a series of selected orthodontic topics which will be assigned to individual residents for presentation to their classmates and faculty. The course director will provide a seminal article on the assigned topic from which the resident will research additional references and present a seminar session based on the material.

**PEDO 6146** Orthodontics V  
**5.0 Semester Credit Hours**

This course comprises two seminar series in which orthodontic diagnosis and treatment principles for the primary and mixed dentitions are presented. Included also are laboratory technique exercises in which commonly used orthodontic appliances are constructed.

**PEDO 5020/5021/5022/6023/6024/6025**  
**Variable Credit Hours**

The postdoctoral program in pediatric dentistry is designed to provide each resident with clinical experience which will enable him or her to function as a proficient and competent provider of comprehensive dental services for children. Throughout the two-
year program, residents will be expected to apply the information gained in the didactic part of the program to the delivery of dental care in the various clinical settings encompassed by the program. Although supervision by faculty is always provided, residents are expected to demonstrate increasing independence and initiative as they progress in clinical experience.

PEDO 5051  Pediatric Physical Diagnosis
1.5 Semester Credit Hours
The pediatric dental resident will be given the opportunity to learn physical evaluation of a child’s various systems to determine the patient’s status prior to administration of general anesthesia.

PEDO 6083/6084 Investigative Project
1.0 Semester Credit Hour
Each resident is required to carry out an investigative project that may be laboratory-, clinic-, or library-based—depending on the interests of the student. Projects must be submitted in the form of a manuscript or publishable quality.

### Periodontics Certificate/Master’s Program

#### FIRST YEAR

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<tr>
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<tr>
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**Summer**

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*Multidisciplinary course*
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The Master’s Degree Program

THIRD YEAR

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Course Descriptions

Courses unique to the program in Periodontics are listed below. Offerings which are common to more than one program are described under “Multidisciplinary Courses.”

PERI 5031/6030/6031 Periodontics Lecture Series
Variable Credit Hours
This course is designed to instruct the student in all aspects of periodontology. It is meant to be an adjunct to the PERI 6073 Literature Seminar. Topics dealing with basic science, pathobiology, and clinical and surgical aspects of periodontal disease will be discussed.

PERI 5010/5011/5012/6011/6012 Clinical Periodontics
Variable Credit Hours
Students have the opportunity to gain clinical experience as they treat patients in the postdoctoral clinic. Cases gradually increase in complexity and severity and include treatment of the medically compromised patient, implant cases, and interdisciplinary cases.

PERI 5073/6073 Literature Seminar
Variable Credit Hours
This course is designed to familiarize the student with the historical and contemporary literature related to periodontics. The first-year course is concerned mainly with basic science literature while second- and third-year courses concentrate on the clinical literature. Students have the opportunity to evaluate the data in the literature, critique experimental design, abstract articles, critically evaluate research findings, and learn to use library resources.

PERI 5074/6074 Current Literature
1.0 Semester Credit Hour
Current periodontal literature published during the academic year is discussed in a seminar format.

PERI 6020 Emergency Care Seminar
Variable Credit Hours
This is a pragmatic course to familiarize the student with the medical emergencies that the clinician may incur while practicing dentistry. Major texts on the medically compromised patient are used as a guideline. The course is given in seminar format.

* Multidisciplinary course

** Certificate is minus Thesis of 4 hours
### Prosthodontists

#### Certificate Program

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<td>PROS 5015</td>
<td>Concepts of Occlusion</td>
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*Multidisciplinary course*
### The Master’s Degree Program

The curriculum is identical for the certificate and master’s programs through the first two years, with the exception of the addition of Teaching Skills course and additional research work for degree candidates.

#### THIRD YEAR

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| **Fall** | | |
| PROS 6033 Clinical Prosthodontics III 4.0 |
| PROS 6076 Literature Seminar III 1.0 |
| PROS 6047 Oral & Maxillofacial Surgery/Prosthodontics 0.0 |
| * PROS 6097 Research 2.0 |
| * PROS 6071 Supervised Teaching 2.0 |
| * INTD 6115 Periodontics/Prosthodontics 1.0 |
| **Total Credits for the Master’s Degree Program** 110.0 |

| **Spring** | | |
| PROS 6034 Clinical Prosthodontics IV 4.0 |
| PROS 6047 Oral & Maxillofacial Surgery/Prosthodontics 1.0 |
| * PROS 6097 Research 2.0 |
| * PROS 6071 Supervised Teaching 2.0 |
| * INTD 6115 Periodontics/Prosthodontics 1.0 |
| **Total Credits for the Certificate Program** 98.5 |

---

*Multidisciplinary course*
The broad field of prosthodontics literature is systematically reviewed with the objective of providing the postdoctoral student with a background of prosthodontic knowledge and history.

These courses are designed to provide the postdoctoral student with the opportunity to gain the prerequisite background and clinical experience in prosthodontic procedures. Fixed, removable, and overdenture concepts and treatment procedures will be emphasized.

This course introduces the graduate student to the discipline of maxillofacial prosthetics. Emphasis is placed on treating patients requiring prosthetic devices in the head and neck area due to surgery or trauma.

Students have an opportunity to become acquainted with sophisticated research equipment through hands-on exposures. Measurements of mechanical, physical, and chemical properties of commonly used dental materials give the student the opportunity to envision and formulate research projects in dental materials.

The objective of this course is to offer each student an opportunity to obtain background information, knowledge, and skills associated with dental implant treatment modalities.

Various concepts of occlusion with special emphasis on the clinical application of gnathology are the focus of this course. The laboratory phase includes the development of a functional occlusion through the cusp-fossa additive wax method and an occlusal equilibration technique.

A seminar devoted to the discussion and coordination of treatments of patients under joint management of the Oral & Maxillofacial Surgery and Prosthodontics departments.

This course offers prosthodontic residents didactic and clinical experience treating geriatric patients.

This clinical course provides experience treating patients on the Maxillofacial Prosthetics Service. Patients with congenital and acquired defects are treated under supervision of the maxillofacial prosthodontic faculty.

The following are basic science and multidisciplinary courses common to the curriculum of two or more programs:

A multidisciplinary review of the interaction between basic and dental clinical science is provided in these two courses.

Clinicopathologic correlations, differential diagnosis, and therapeutic rationale are emphasized. The integration of history, physical findings, and clinical laboratory data with pertinent radiographic findings, clinical presentations, and anatomic pathology will be emphasized.

The physiology and psychology of pain and its control, along with pharmacology for pain control, is the focus of this rotation. The techniques of general anesthesia, intravenous, and nitrous oxide sedation are presented in lectures, discussed in seminars, and demonstrated. Application of techniques is performed under supervision. Special attention is given to the management of emergencies and the apprehensive patient.

The broad field of prosthodontics literature is systematically reviewed with the objective of providing the postdoctoral student with a background of prosthodontic knowledge and history.

Various concepts of occlusion with special emphasis on the clinical application of gnathology are the focus of this course. The laboratory phase includes the development of a functional occlusion through the cusp-fossa additive wax method and an occlusal equilibration technique.

A seminar devoted to the discussion and coordination of treatments of patients under joint management of the Oral & Maxillofacial Surgery and Prosthodontics departments.

This course offers prosthodontic residents didactic and clinical experience treating geriatric patients.

This clinical course provides experience treating patients on the Maxillofacial Prosthetics Service. Patients with congenital and acquired defects are treated under supervision of the maxillofacial prosthodontic faculty.

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The following are basic science and multidisciplinary courses common to the curriculum of two or more programs:

A multidisciplinary review of the interaction between basic and dental clinical science is provided in these two courses.

Clinicopathologic correlations, differential diagnosis, and therapeutic rationale are emphasized. The integration of history, physical findings, and clinical laboratory data with pertinent radiographic findings, clinical presentations, and anatomic pathology will be emphasized.
ORTH 5094 Research Methodology I
1.5 Semester Credit Hours
This course is an introduction to methods and techniques used in dental research. Topics will include basic assumptions and concepts of scientific research, selecting research topics, specifying objectives and hypotheses, literature reviews and experimental design.

RESD 5095 Research Methodology II - Development of a Thesis Proposal
0.5 Semester Credit Hour
This course is a continuation of ORTH 5094 Research Methodology I.

DIAG, ENDO, PEDO, PERI, PROS 5067/5068/6069/5071/6071/6070/6072 Supervised Teaching
1.0/2.0 Semester Credit Hours
Graduate students are assigned to the various clinics, laboratories, and classes for the opportunity to acquire experience in teaching undergraduate students in a variety of situations. Supervision and evaluation of teaching performance is provided by the graduate faculty.

DIAG, ENDO, PEDO, PERI, PROS 5097/6097 Research
Variable Credit Hours
This course offers the student an opportunity to review the literature and to design and complete a laboratory or clinical research project under the direction of a faculty advisor. Research should result in a paper by certificate students suitable for publication in a peer-rated journal. Students in the master’s programs will be expected to collect and analyze data for a thesis which must be defended as the culmination of research efforts.

PERI 5052 Surgical Anatomy
1.0 Semester Credit Hour
This didactic and laboratory course provides a student with an overview of head and neck anatomy. Specific sessions address concerns in the maxilla and mandible for the placement of osseointegrated implants. A dissection review in human specimen is completed in the anatomy laboratory.

INTD 5013/6014/6115 Periodontic/Prosthodontic Seminar
6.0 Semester Credit Hours
A seminar which brings together the residents and graduate staff from the periodontic, prosthodontic, and endodontic postdoctoral programs to share clinically relevant multidisciplinary information. Patient diagnostic evaluations and treatment plans are evaluated in an interactive environment. Selected topics involving new advances and pain control are presented.

DIAG, ENDO, PERI, PROS 6098 Thesis
Variable Credit Hours
Prerequisite: Admission to candidacy for the Master of Science degree
Completion of an acceptable thesis is required for the Master of Science degree. Registration in this course for at least one semester is required of all degree candidates.

PATH 6026 Surgical Oral Pathology I
1.0 Semester Credit Hour
This course is presented in the first semester and consists of 16 one-hour sessions of instruction conducted as case conferences utilizing radiographic, histopathologic and clinical projected glass slides and Kodachromes. Students present assigned literature reviews and cases emphasizing radiographic and histopathologic changes are discussed. Students include those from Oral and Maxillofacial Surgery, Periodontics, Endodontics, and Dental Diagnostic Sciences.

PATH 6027 Surgical Oral Pathology
1.0 Semester Credit Hour
This course is a continuation of PATH 6026 Surgical Oral Pathology. It is presented in the second semester and consists of 16 one-hour sessions of instruction conducted as case conferences utilizing radiographic, histopathologic and clinical projected glass slides and Kodachromes. Students present assigned literature reviews and cases emphasizing radiographic and histopathologic changes are discussed. Students include those from Oral and Maxillofacial Surgery, Periodontics, Endodontics and Dental Diagnostic Sciences.

INTD 6070 Teaching Skills for Dental Educators
1.5 Semester Credit Hour
This course, designed to assist graduate students and faculty in acquiring teaching skills, is composed of four modules, each covering a range of topics from lecture and clinical teaching to instructional development to assessing student achievement.

RESD 6190 Interdisciplinary Seminar
1.0 Semester Credit Hour
This seminar course is designed to relate the various dental specialty fields to each other in relation to patient care. Reinforcement of the basic sciences as they are clinically applied will be provided. Students will have an opportunity to extend their clinical knowledge beyond their own specialty areas of training and to become...
SELC 7089  Interdisciplinary Issues and Approaches to Death & Dying
1.0 Semester Credit Hour
The course provides an opportunity to explore issues and interdisciplinary approaches related to death and dying at both the personal and professional levels. Emphasis is placed on the positive and necessary values of compassion, listening, and tolerance for varied beliefs. The course encourages participants to engage in constructive critical analysis through self-discovery about death and dying. Areas for discussion include: values clarification, definitions of death, stages of dying, emotions surrounding loss, survivorship, ethical and legal components of death, and transcultural aspects related to death and dying. Communication will be presented as a primary intervention method in dealing with death-related issues. Critical analysis of a variety of situations will be stressed as an integral part of the interdisciplinary approach in determining appropriate therapeutic interventions. A “CR” for successful completion will be indicated on the transcript. Withdrawal from the elective (with notice to the course director) will be permitted at any time without transcript recording.

SELC 7090  Air Abrasion in Dentistry
0.5 Semester Credit Hour
This is a course on the uses of air abrasion technology. It is designed to better prepare students to use the technology in the clinic.

Associated Programs

Advanced Education in General Dentistry

The Advanced Education in General Dentistry (AEGD) program is designed to offer intensive clinical and didactic training in comprehensive care of the dental patient with complex problems. Administered by the Department of General Dentistry, the AEGD involves the direct delivery of advanced dental care in each of the dental specialties through the Health Science Center’s dental clinic as well as extramural sites. AEGD residents work closely with residents of the General Practice Residency program and share a common clinic facility, clinical faculty, and some didactic courses. The AEGD and General Dentistry Residency programs are designed to complement each other as they share similar but differing objectives.

The curriculum is intended to provide the scientific basis for dental practice and to develop the residents’ skill in lecture preparation and presentation. In the year of training, the resident spends more than 500 clock hours in seminar, lecture, and presentation courses that cover each of the specialty areas of dentistry. Courses are designed at the postdoctoral level to complement the clinical experiences residents will encounter and the treatments they will be providing. Residents participate as educators/audience for presentations which are required in many of the courses. Clinical faculty of the AEGD are integrally involved in a major portion of the didactic component as course directors and lecturers. In some courses, AEGD residents participate alongside specialty students. Residents are afforded time to attend continuing education offerings at the Health Science Center.

Clinical training begins in July. Patient assignment to residents is closely managed to assure each resident a broad mix of treatment experiences. Comprehensive treatment of complex cases is required of each resident, although residents are also allowed to seek assignment of patients requiring treatment appropriate to her/his specific educational needs or aims. For 35 hours each week, residents provide care in the Advanced General Dentistry Clinic to patients; a substantial proportion of the patients are medically, mentally, and/or physically compromised. Four-handed dentistry is stressed as are other aspects of dentistry necessary for modern private practice. Clinical faculty are general dentists from the Department of Gen-
eral Dentistry, each of whom has received postdoctoral training in general dentistry. Specialty faculty fulfill a major role, providing consultation and supervision as needed. The specialty residency clinics serve as a referral both to and from the Advanced General Dentistry Clinic. AEGD residents provide emergency call service to patients of dental students, the Advanced General Dentistry Clinic, and the faculty’s private practice clinic.

Further clinical experiences are gained through 16 days of rotations at extramural sites. An introduction to hospital practice is provided with a rotation in Hospital Dentistry. During this rotation, residents attend rounds with the Department of Hospital Dentistry and provide consultations to the medical services and operating rooms.

Residents are encouraged to complete a research project with faculty serving as mentors. Residents receive didactic instruction in research design and statistical analysis prior to the research effort. Laboratory support also is provided. This opportunity is intended to allow the resident to apply didactic learning, to gain an appreciation of the scientific method, and to form a basis upon which to evaluate techniques and materials. Some applicants to the AEGD and General Practice Residency programs have sought the degree and scope of training that is provided by participating in both programs in successive years, in order to gain an extremely well-rounded education in both the clinical and hospital practice of dentistry. Residents in each program are invited to make application to the second program in the fall of the first year of training. Consideration of applicants to the AEGD program is based to a large extent upon performance in undergraduate and dental schools, desire and degree of interest in general dentistry, and career plans.

Applications must be submitted before the deadline, October 15 each year, for the program beginning July 1 and ending June 30 of the succeeding year. Applicants must hold a degree from an accredited North American dental school. The AEGD program participates in the Postdoctoral Application Support Service (PASS) (optional) and in the Postdoctoral Dental Matching Program (mandatory). Program applications may be obtained from the Postdoctoral Division of the Department of General Dentistry in the Dental School and submitted directly to the AEGD program. Additional information about this residency is available on the division Website at http://www.dental.uthscsa.edu/educprog/aegend.html. All residents in the program receive a stipend.

**General Practice Residency**

The General Practice Residency program offers graduate dentists an opportunity to become broadly competent general practitioners capable of providing comprehensive, state-of-the-art dental care. To accomplish this goal, clinical, educational, and research objectives are addressed. Dental care for the medically compromised patient serves as the framework upon which clinical training is based. Such patients include organ transplant recipients, chemotherapy patients, prosthetic cardiac valve candidates, and individuals with a variety of other medical complications. Treatment of these patients is offered in both inpatient and outpatient settings, with emphasis on the management of their medical problems.

In the hospital environment, the residents’ responsibilities include consultations, treatment of inpatients, operating room dentistry, and emergency room dentistry. Complementing this exposure, the outpatient experience allows residents the opportunity to advance their knowledge and clinical skills in all the dental specialties, with continued emphasis on comprehensive care.

Research opportunities are available within the program and throughout the Health Science Center to supplement the clinical exposure. Resident participation in an ongoing or new clinical research project is encouraged. This experience is provided to give residents an appreciation of research design, data analysis, and the publication process. In addition, this exercise is designed to equip residents with the expertise required to judge the merits of future trends and treatment techniques.

Educational experiences are comprised of lectures, seminars, and case presentations given by the residents throughout the program. Residents are required to develop these presentations (to include outline, bibliography, and audiovisual aids) from literature reviews. The experience is intended to acquaint residents with the organization, preparation, and delivery of a lecture/seminar.

Outpatient dentistry is performed in the Advanced General Dentistry Clinic, with each resident assigned a group of comprehensive care patients. The resident is provided an operatory and usually has a dental assistant. The clinic is comprised of 16 operatories, panoramic and intraoral radiographic capabilities, a waiting room, secretarial office, resident office, break room, and dental laboratory. Oral hygiene care is provided by dental hygienists. The clinic is equipped for both intravenous and inhalation sedation, and complete laboratory facilities are proximate. A small reference library is supported by the exceptionally comprehensive Health Science Center Library. A one-month rotation in oral surgery or otolaryngology may also be selected. Required rotations include three weeks in general anesthesia, two weeks in the Emergency Center, and two months in the dental clinic at University Hospital.

Applications must be submitted before the deadline, October 15 each year, for the program beginning July 1 and ending June 30 of the succeeding year. Applicants must hold a degree from an accredited North American dental school. The GPR program participates in the Postdoctoral Application Support Service (PASS) (optional) and in the Postdoctoral Dental Matching Program (mandatory). Program applications may be obtained from the Postdoctoral Division of the Department of General Dentistry in the Dental School and submitted directly to the GPR program. Additional information about this residency is
available on the division Website at http://www.dental.uthscsa.edu/educprog/advgpr.html. All residents in the program receive a stipend.

Dental Public Health Residency
The Department of Community Dentistry offers a one-year, full-time or a two-year, part-time Residency in Dental Public Health. The program, which is accredited by the Commission on Dental Accreditation adheres to the guidelines of the American Board of Dental Public Health and is designed to allow dentists with the Master of Public Health degree or its equivalent to complete the educational requirements for Board Certification as a specialist in Dental Public Health. A stipend and travel costs for South Texas research projects may be available to U.S. citizens and permanent residents.

Public health dentists prevent and control oral diseases and promote oral health through organized community efforts. They are concerned with dental education of the public, with applied dental research, and with administration and operation of group dental care programs, both public and private. The Institute of Medicine has defined the public health mission as “fulfilling society’s interest in assuring conditions in which people can be healthy.” Three broad functions to achieve this are:

• Assessment—the regular collection and dissemination of data on oral health status, community needs, and epidemiologic studies.
• Policy—the use of the base of scientific knowledge in policy decisions affecting the public’s oral health.
• Assurance—of constituents that services necessary to achieve predetermined goals for oral health are available, either by providing them, by assisting and funding others, or by regulation.

Public health dentists and dental hygienists are employed in various health agencies at all levels of government, in the insurance industry, in dental and dental hygiene schools, in schools of public health, in community health centers, in the uniformed services, and in the health industry as consultants.

We encourage dentists to complete the MPH degree at an accredited School of Public Health including the University of Texas SPH programs in San Antonio, Brownsville, El Paso, Dallas, and Houston, and at the Texas Department of Health-Austin, as well as other schools of public health in Texas, such as University of North Texas-Fort Worth and TAMU School of Rural Public Health-Bryan, Texas. Residential and distance MPH programs are also offered by other accredited schools of public health (http://www.ceph.org/list.htm). The MPH degree can be completed as a full-time student or as a part-time student while maintaining employment. Likewise, this Residency will admit dentists with the MPH degree on a full-time or half-time basis, maintaining continuity of employment. Special educational provisions are made for distant residents and they will conduct their research projects on topics valuable to their employing agencies.

In this program, half of the resident’s time is concerned with design, implementation, analysis, interpretation, and reporting of two research projects. One third of the time is devoted to advanced seminars in Prevention of Oral Disease and Financing of Dental Care. Program Planning and Administration is addressed both through seminars and agency visits; other field, clinical, and teaching experiences are offered. Dental graduates with superior career attainments in dental public health may be eligible to combine the MPH degree at The University of Texas School of Public Health, San Antonio Program and this residency, but separate applications to each program are required.

The Department of Community Dentistry has programs in epidemiology, oral disease prevention and health promotion, health services, nutrition, cariology, and sialochemistry, and cooperates in several school, mobile, and community health center clinical primary care programs. Other resources to the program include the Texas Department of Health Bureau of Dental Health, the San Antonio Metropolitan Health District, and The University of Texas School of Public Health, San Antonio Program.

Application deadline is March 31 for the program commencing September 1 each year and ending on August 31 the following year. Further information is available from the Department of Community Dentistry of the Dental School.

Application forms for qualified applicants — those dentists holding or completing the MPH degree or equivalent — are available from the Department of Community Dentistry. The following Website has further information: http://dental.uthscsa.edu/advdphr.html.

Oral and Maxillofacial Surgery Residency
The Oral and Maxillofacial Surgery Residency, a six-year medical degree/certificate program, opens two positions each year. The course of study is designed to integrate the advanced biological sciences into progressive clinical training. Additionally, opportunities and facilities are available for the resident to pursue clinically relevant research. Every resident will have a research project published and presented at a national meeting prior to receiving a certificate of residency training.

In the clinical portion of the training program, emphasis is placed on total health care of the hospitalized patient. Residents are expected to become competent in overall patient management, including physical diagnosis, fluid and electrolyte administration, medication, and interpretation of laboratory data. Other activities that are used to supplement hospital clinical oral and maxillofacial surgery experience and rotations include a dental school assignment, emergency room duty, special clinics, conferences, and teaching rounds. There is an excellent balance between inpatient admissions and outpatient visits encompassing dentofacial surgery; maxillofacial trauma; pathology; and orthognathic, prosthodontic, temporoman-
dibular, and reconstructive surgery. Approximately 450 hospital admissions and 10,000 outpatient procedures are performed annually through the oral surgery clinic at University Hospital, South Texas Medical Center.

While assigned to the Oral and Maxillofacial Surgery service, residents rotate for six months in the Dental School’s outpatient surgery suite. The suite is a fully equipped outpatient operating facility with general anesthesia capabilities. The resident participates in an extensive number and variety of cases that are beyond the capability of undergraduate dental students. These cases include, but are not limited to, impactions, tori, biopsies of oral lesions, implants, scar revision, osteotomies, and fractures. An opportunity for clinical teaching experience with dental students and other dental specialties is provided also.

In the first year, the resident is enrolled in the Medical School (pathophysiology year) for approximately 10 months. When he/she is not in class, the resident participates in oral and maxillofacial surgery rotations. The second year is comprised of clinical clerkships (49 weeks) which are part of the medical curriculum. During this time, the resident/medical student is assigned to medical and surgical rotations. As time permits, he/she also attends conferences and rounds with the oral and maxillofacial service.

In the third year, as a junior resident in oral and maxillofacial surgery, the resident is given increasing clinical responsibility and participates in major surgical procedures. This year is divided between assignments at the nearby Audie L. Murphy Memorial Veterans Hospital (“V.A. Hospital”) and University Hospital, South Texas Medical Center. Four to six months of inpatient anesthesia is also scheduled this year. Upon successful completion of Medical School requirements, the resident is awarded a Doctor of Medicine degree at spring commencement.

During the fourth-year general surgery internship, residents rotate on general surgery services for an opportunity to learn basic surgery techniques and surgical management — particularly pre- and postoperative care. This experience includes general surgery, thoracic surgery, vascular surgery, head and neck surgery, and neurosurgery. Following the successful completion of the internship, the resident is eligible to take the state licensure examination in medicine.

In the fifth year, the resident receives additional training in oral and maxillofacial surgery, progressively receiving more and more complex cases. In the fifth year, residents are routinely scheduled to work side by side with senior residents and teaching staff on all major surgeries.

Serving as chief resident in the Oral and Maxillofacial Surgery Service during the sixth year of the program, the resident has increasing latitude for independent action commensurate with her/his knowledge and skills. In addition to performing all aspects of oral and maxillofacial surgery, the resident is responsible for running the oral and maxillofacial surgery services at the Audie L. Murphy Memorial Veterans Hospital and University Hospital.

Each resident is required to participate in research activities during training. While clinical research projects predominate, there is opportunity for basic science research as well. The research effort is expected to result in papers submitted to journals for publication and in abstracts for presentation at professional meetings.

Medical School tuition and fees for the second, third, and fourth year of the program are approximately $7,000 per year.

Additional information about this residency is available from the Division of Oral and Maxillofacial Surgery, Department of Surgery, UTHSCSA.

Orthodontics

The Department of Orthodontics offers a 35-month residency for advanced training in orthodontics and dentofacial orthopedics. This program is designed to offer a broad spectrum of clinical and didactic experience in the field. The emphasis of the program is placed on strong clinical and scholarly skills in preparation of the resident for an academic career. Prior to the student’s completion of the program, a Master of Science or Ph.D. program must be completed to accompany the certificate of residency training. The training program will meet the formal requirements for eligibility to take the phase II and phase III portion of the American Board of Orthodontics. For more information call 210-567-3500 or -3510.
The Graduate School of Biomedical Sciences was established in 1972 and currently hosts doctoral programs in Biochemistry, Cellular and Structural Biology, Microbiology and Immunology, Molecular Medicine, Nursing, Pharmacology, Physiology and Radiological Sciences. Masters degrees are offered in each of these disciplines as well as in several areas of oral health sciences [Dental Diagnostic Science, Endodontics, Periodontics and Prosthodontics], Allied Health Sciences [Clinical Laboratory Sciences and Dental Hygiene] and Clinical Investigation. These programmatic vehicles enable the Graduate School of Biomedical Sciences to assert its primary objective of educating students committed to the advancement of knowledge in contemporary areas of the biomedical sciences. A compelling aspect of graduate education in a health science center environment is the opportunity for graduate students to interface with health professionals with diverse technological and conceptual capabilities and perspectives in the biomedical sciences. The proof of accomplishment or enduring value of any educational process must be accounted in the demonstrated productivity and academic achievement of the graduates of the program. Without question, the doctoral and masters programs of the Graduate School of Biomedical Sciences have, during the past three decades, achieved outstanding success in their educational mission of preparing professional scientists quite comfortable in function in both the academic and industrial sectors.

Programs
The University of Texas Graduate School of Biomedical Sciences at San Antonio offers graduate programs in the biomedical sciences leading to the Master of Science and Doctor of Philosophy degrees in the following disciplines: Biochemistry, Cellular & Structural Biology, Microbiology and Immunology, Molecular Medicine, Pharmacology, Physiology, and Radiological Sciences. These programs provide opportunities for graduate students to become competent in a specialized field, to attain excellence in the conduct of research, and to gain an understanding of the interdisciplinary nature of biomedical sciences. Detailed information about these graduate programs is provided in this Catalog.

Additionally, graduate programs emphasizing the development of professional competence are offered in Nursing, Pharmacy, Dentistry, Medicine, and Allied Health Sciences. The graduate program leading to the Master of Science in Nursing and Doctor of Philosophy degrees are conducted by the faculty of the Health Science Center’s School of Nursing and administered through the Graduate School of Biomedical Sciences. Postdoctoral certificate and Master’s degree programs in Endodontics, Periodontics, Prosthodontics, and Dental Diagnostic Science are offered under the joint auspices of the University’s Dental School and the Graduate School of Biomedical Sciences. A new Masters program in Clinical Investigation is designed for interested selected graduate students and health care professionals in the design and conduct of clinical studies. A Master of Science and Doctoral Program in Biomedical Engineering should initiate activity in the fall of 2003. The program will be jointly offered by the Graduate School of Biomedical Sciences at UTHSCSA and the Graduate School at the University of Texas at San Antonio. The program leading to the Doctor of Pharmacy degree is jointly administered by the College of Pharmacy of The University of Texas at Austin and the Graduate School of Biomedical Sciences. Detailed information about these programs can be found in the schools’ respective section in this Catalog.

Graduate programs in Allied Health Sciences disciplines (Dental Hygiene and Clinical Laboratory Sciences) are administered by the Graduate School of Biomedical Sciences.

Each program is supervised by a Committee on Graduate Studies (COGS) composed of members of the graduate faculty of that program. The Committee is responsible for establishing admission requirements specific to the program, recommending approval or denial of admission of applicants to the program, overseeing academic curricula, monitoring its students’ academic progress in didactic and research activities, attesting eligibility for admission to candidacy for a degree, and verifying to the Graduate Faculty Council that the student has fulfilled all requirements for the awarding of the degree. The Chair of the Committee on Graduate Studies is the administrative head of each program. The Chair is the voting representative of the program on the Graduate Faculty Council and serves as the liaison officer between the Committee on Graduate Studies and the Graduate School Dean’s Office on all matters pertaining to applicant and student affairs. In several of the programs, one graduate faculty member serves as both Graduate Advisor and Chair of the Committee on Graduate Studies.

The Graduate Faculty Council has the responsibility to establish and maintain policies and regulations on matters of graduate education common to all programs administered by the Graduate School of Biomedical Sciences. These include such matters as general academic requirements for admission to graduate study and to candidacy, for continuation of studies, and awarding of a degree; standards of student professional conduct; grading systems; graduate program review; and criteria for thesis/dissertation research, its supervision, and its defense. Each Committee on Graduate Studies is responsible to the Graduate Faculty Council and submits recommendations.
on various graduate program matters, including the granting of a degree, to the Council for review and action.

The Dean of the Graduate School of Biomedical Sciences is the administrative head of the graduate programs and serves as the Chair of the Graduate Faculty Council. Ex-officio nonvoting members of the Council include the Associate Deans of the Graduate School, the Associate Dean for Graduate Nursing Program, the Associate Dean for Advanced Education of the Dental School, the Associate Dean for Allied Health, the Associate Dean for Pharmacy Education, the Associate Vice President of Student Services, and the Registrar. The voting members of the Council consist of the COGS chairs of the programs in Biochemistry, Cellular & Structural Biology, Clinical Investigation, Microbiology and Immunology, Molecular Medicine, Nursing, Pharmacy, Pharmacology, Physiology, and Radiological Sciences and one faculty representative each from the graduate programs in Dentistry and Allied Health. A student representative is elected from each of the following graduate student constituencies: Graduate Student Association, dentistry, nursing, allied health, and pharmacy to serve as nonvoting members of the Council.

Committees on Graduate Studies (COGS)

**Biomedical Sciences Programs**

**Biochemistry**
- Martin L. Adamo, PhD
  - Chair and Graduate Advisor

**Biomedical Engineering**
- C. Mauli Agrawal, PhD, PE
  - Chair and Graduate Advisor

**Cellular & Structural Biology**
- Ellen Kraig, PhD
  - Chair and Graduate Advisor

**Clinical Investigation**
- Michael Lichtenstein, MD, Chair and Graduate Advisor

**Clinical Laboratory Sciences**
- Linda Smith, PhD, Chair
  - George Kudolo, PhD, Graduate Advisor

**Microbiology**
- Keith Krolick, PhD
  - Chair and Graduate Advisor

**Molecular Medicine**
- Alan Tomkinson, PhD, Chair
  - Z. Dave Sharp, PhD, Graduate Advisor

**Pharmacology**
- William Clarke, PhD
  - Chair and Graduate Advisor

**Physiology**
- Glenn Toney, PhD
  - Chair and Graduate Advisor

**Radiological Sciences**
- Gary D. Fullerton, PhD
  - Chair and Graduate Advisor

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**Professional Sciences Programs**

**Dental Diagnostic Science**
- Robert Langlais, DDS, MS
  - Chair and Graduate Advisor

**Endodontics**
- (vacant)
  - Chair and Graduate Advisor

**Nursing**
- Elizabeth Reifsnider, PhD, RN, Chair

**Periodontics**
- Bjorn Steffensen, DDS, PhD, MS
  - Chair and Graduate Advisor

**Prosthodontics**
- Robert J. Cronin, DDS, MS
  - Chair and Graduate Advisor

**Dental Hygiene**
- Sharon Barbieri, MS, Chair and Graduate Advisor

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**Admissions and Application**

Requirements for admission to graduate programs are detailed in the *Applicant Viewbook* of the Graduate School of Biomedical Sciences. Application forms are included in the *Viewbook*.

General admission requirements include a bachelor’s degree from an accredited institution in the United States or proof of equivalent degree and training at a foreign institution. Adequate study is essential. The undergraduate grade point average should be no lower than B (3.0 on a 4.0 system). The grades received in graduate courses, which are computed separately, are also considered in evaluation of the application.

Satisfactory scores on the Graduate Record Examination (GRE) General (Aptitude) Test are desirable; in general, a minimum of 1000 for the combined scores on the verbal and quantitative portions of the General (Aptitude) Test is preferred. Individual programs may prefer higher minimum scores. Scores on GRE tests taken more than five years prior to the date of application are not acceptable.

Applicants from countries where English is not the native language are also required to submit scores on the Test of English as a Foreign Language (TOEFL). A minimum score of 550 is required on the paper test. A minimum score of 213 is required on the computer-based test.

In lieu of a GRE score, applicants to the Clinical Investigation program must provide proof of a degree in Medicine, Dentistry, Allied Health Science, or evidence of concurrent enrollment in the Graduate School of Biomedical Sciences.

For students applying to the MD/PhD program, scores from the Medical College Aptitude Test (MCAT) may be substituted for the GRE. In this case, MCAT scores of 25 or higher will be considered.

For students applying to the DDS/PhD program, scores from the Dental Aptitude Test (DAT) may be substituted for the GRE. Scores of 18 or higher will be considered.
Guidelines for Student Admission
Selection
Student Admissions Committees of the Graduate School of Biomedical Sciences consider any of the following elements in the selection of students. It has been clearly documented and widely understood that admissions processes emphasizing performance of applicants on standardized test scores and grade point averages alone do not necessarily result in the admission of a diverse student body. Elements that may be included in consideration for each applicant:

- applicant’s goals for future (written personal statement or at interview)
- awards and honors for academic achievement
- awards and honors of distinction for humanitarian service
- awards and honors for public speaking and communication skills
- bilingual language ability
- employment history, especially as it occurred simultaneously with undergraduate academic preparation
- extracurricular activities
- GPA and standard test scores
- leadership potential
- personal interview
- public/community service volunteer activities
- reference letters or recommendations
- research accomplishments
- socioeconomic history (educationally and/or economically disadvantaged)
- successful experience in overcoming adverse personal, family, or life conditions/experiences
- Texas resident, or permanent Texas resident alien
- volunteer activities in health care- or research-related areas

Scholarship Awards Policy
Twice annually or as appropriate for each School within UTHSCSA, the Director of Financial Aid will submit scholarship information to the respective Associate Dean for Student Affairs. The following data will be supplied to each Associate Dean:

1. Name of the scholarship fund
2. Current amount available to be awarded
3. Award criteria and whether or not financial need is a consideration

Each School determines the selection method and criteria for making scholarship awards. A School may consider any of the elements contained within the UTHSCSA Guidelines for Student Admission in awarding scholarships. Each school will identify the specific elements that will be used in awarding scholarships. Continuation of scholarship(s) is dependent upon academic performance. Recommendations for awards from the Dean will be forwarded to the Director of Financial Aid and the Chairperson of the UTHSCSA Loan and Scholarship Committee for approval at the next committee meeting.

Awards will be presented to the recipients at the appropriate times as determined by the respective Associate Deans and the Director of Financial Aid. No scholarship dollars will be awarded to recipients without approval of the Committee.

Regarding Competitive Scholarships at the UTHSCSA: each School determines the criteria and methods for students to apply for Competitive Scholarships to be awarded from school-related scholarship funds. Criteria are submitted to the UTHSCSA Loan and Scholarship Committee for approval. All awards must comply with the rules and regulations for Residence status of the Texas Higher Education Coordinating Board and be approved by the UTHSCSA Loan and Scholarship Committee. The time frame for making these awards varies according to the admission and matriculation cycle for the individual School.

Non-degree (Special) Students
An individual who wishes to enroll in courses presented in the Graduate School of Biomedical Sciences without entering a degree program must apply for admission as a Non-degree (Special) Student. The basic requirements for such admission are the same as for degree students. Students must receive approval of registration each semester by the Associate Dean of the Graduate School and by the instructor of each course, maintain a grade point average of at least a B (3.0 in 4.0 system) in courses taken as a Special Student, and maintain a maximum course load of nine semester hours in fall or spring semesters and six semester hours in summer session. In exceptional circumstances, an individual who is under consideration for admission to a degree program in the Graduate School may be permitted to register for a greater course load, with the concurrence of the Graduate Advisor of the degree program concerned. In general, students may not register as Special Students for more than four consecutive semesters. All grades received as a Special Student will be included in the graduate student’s transcript and in computation of the cumulative GPA if the student is admitted subsequently to a graduate program. Under special circumstances, such as the computation of the GPA to determine academic probation, the Associate Dean may grant exceptions to this policy. The grading policies for special students are the same as those for degree-seeking students. Special student status will not be granted to premedical students for the purpose of taking Medical School courses.

Dual Degree Programs
Dual degree programs of study provide a mechanism for medical or dental students to obtain an M.S. or Ph.D. degree in addition to an M.D. or D.D.S. degree at The University of Texas Health Science Center at San Antonio. The purpose of these programs is to offer students the opportunity to pursue a course of study to become clinical scientists who have not only depth of knowledge in clinical medicine or dentistry and in a basic science discipline,
but also experience in research planning and execution. Students who take advantage of these programs have the opportunity to become scientists who are exceptionally qualified to apply specialized research competence to the resolution of clinical problems.

Those wishing to obtain both a professional degree and a graduate degree must satisfy the entrance requirements of both the Medical or Dental School and the Graduate School of Biomedical Sciences. Admission to each school must be accomplished separately.

Through the interdigitation of the academic curricula in the professional school and the graduate school and of laboratory research for the thesis or dissertation, requirements for the dual degrees can be accomplished. In every instance, a specific graduate program or schedule shall be worked out between the student, the appropriate Committee on Graduate Studies of the Graduate School, the Associate Dean of the Graduate School, and the Associate Dean for Student/Academic Affairs of the Medical or Dental School.

Additional information about dual degree programs is available from the Dean’s office.

Requirements and Regulations

A student enrolled in the Graduate School of Biomedical Sciences is subject to all established requirements and regulations. Exceptions to these rules and issues not covered by previously determined guidelines will be decided by the Graduate Faculty Council.

Attendance

Attendance requirements for regularly scheduled classes, laboratories, and clinic periods are the option and prerogative of the course instructor for that particular portion of the curriculum. The policy regarding attendance for each course is announced by the instructor at the first meeting.

Unexcused absences in courses in which attendance is required may be considered sufficient cause for failure. Excused absences may be granted by the course director in such cases as illness or personal emergency. Such leaves are considered on an individual basis, and verification of the reason for the absence may be required. It is the responsibility of the student to take the initiative in arranging with the faculty to make up work which is missed.

Residence Required for Graduation

Each doctoral student must spend a minimum of two full 16-week semesters, or the equivalent, as a full-time student in residence at The University of Texas Health Science Center at San Antonio Graduate School of Biomedical Sciences. A candidate for the M.S. degree must be registered in the thesis course for at least one term; a candidate for the Ph.D. degree must be registered in the dissertation course for at least two terms. The residence requirement is based on the premise that the scholarship and proficiency necessary for achievement of a graduate degree in the biomedical sciences are best acquired through endeavors devoted wholly to study and research in the university environment.

Time Limits

Ph.D. Degree. No official limit has been placed on the time for acquiring a Ph.D. degree. However, each program has a written policy on time-to-degree that will guide the student. Coursework taken more than six years prior to the end of the candidate’s final semester may not be accepted for credit and, if necessary for the degree, must be repeated or specifically approved by the Committee on Graduate Studies. All doctoral work is subject to review by the Graduate Faculty Council and the Dean.

The 99/130 Hour Rule

In 1999, the Texas Higher Education Coordinating Board ruled that institutions with doctoral programs must implement special policies for students whose enrollment exceeds a certain critical number of credit hours. The critical number for doctoral nursing students is 99 credit hours. The critical number for doctoral students in the basic sciences is 130 credit hours.

At this institution this rule will be in effect for students who matriculate in a doctoral program starting in the Fall 2001 semester. After that time students enrolled for more than the critical number of credit hours will be required to pay nonresident tuition for all subsequent semesters.

M.S. Degree. All requirements for a master’s degree must be completed within one six-year period. In special cases, upon recommendation of the Committee on Graduate Studies, the Dean may consider reinstatement.

Credit Hour Requirements

Ph.D. Degree. No specific number of semester credit hours has been set for the attainment of the Ph.D. degree. The student is required to demonstrate intellectual command of the subject area of the graduate program and capability to carry out independent and original investigation in the area. The specific curriculum requirements of each graduate program are defined in the section on Programs of Instruction. The curriculum of each student is supervised by the appropriate Committee on Graduate Studies.

M.S. Degree. A minimum of 30 semester credit hours is required for the M.S. degree. The student must successfully complete at least 12 semester credit hours of coursework in addition to credit hours awarded in Research, Thesis, Seminar, and Literature Searching. With the exception of dual degree programs, all work for the M.S. degree is ordinarily done at The University of Texas Health Science Center at San Antonio Graduate School of Biomedical Sciences.

A maximum of six semester hours of graduate course work from another institution may be applied for credit toward the Master’s degree, but only with the approval of the Committee on Graduate Studies in the student’s program. In cases where such credit is approved, the student must still meet the residence requirement for two full semesters. For students participating in a dual degree
program, usually six semester hours in the medical or dental curriculum may be credited toward the M.S. degree. As a rule, these semester hours will come from survey courses in the student’s major area.

**Waiver of Courses.** With the approval of the Committee on Graduate Studies, graduate credit hours from other universities may be accepted in lieu of required courses. In addition, the Committee may waive certain required courses, based on the student’s previous graduate course work. These hours will be accepted in the form of credit for the course material rather than by application of credit hours directly to the student’s transcript.

**Foreign Language Requirement**
Demonstration of proficiency in a foreign language is not required for either the M.S. or Ph.D. degree.

**Ethics Course Requirement**
All doctoral students must take the course INTD 6002 “Ethics in Research,” or its equivalent, as a requirement for graduation. Master of Science students are strongly encouraged to take the INTD 6002, but it is not a requirement for graduation.

**Supervised Teaching Requirement**
Directed teaching in the student’s major area under the close supervision of one or more faculty members is required of each doctoral student. Up to six semester hours of credit toward a degree may be granted to the student who completes at least two semesters of teaching. In order to receive this credit, the student must enroll in a special graduate course in Supervised Teaching in her or his area and receive a grade of S (Satisfactory) or H (Honors).

**Quantity-of-Work Rule**
Full-time graduate students may be awarded stipends as teaching or research assistants when funds are available. Student stipends funded from federal sources are governed by federal regulations. Full-time students are discouraged from taking employment and stipends serve as scholarships to meet financial need.

There may be circumstances under which part-time graduate students desire gainful employment within the Health Science Center (or full-time employees desire to pursue part-time graduate studies), and the following guidelines should apply:

Within funds available, part-time graduate students who are gainfully employed part-time within the Health Science Center in addition to pursuing graduate studies may be paid prorated rates within salary scales of job classification for which they are qualified and/or to which they are assigned. This procedure is permitted primarily to allow gainful part-time employment in an area unrelated to the student’s formal academic program.

The Committee on Graduate Studies should be consulted in advance when a part-time student desires part-time employment within the student’s own supervising department, or when the student is employed in a work situation that exists whereby the employment will be of direct benefit in meeting the graduate degree requirements. The committee should then recommend an appropriate part-time rate of pay consistent with the objectives of the graduate program in general with due consideration to the pay rates of other graduate students.

Departments requesting employment of a part-time graduate student outside the supervising department (and in an area unrelated to the student’s academic program) should determine the number of hours for which the student is registered prior to contacting the Office of Human Resources regarding appointment of such students. This will enable the Office of Human Resources to provide proper salary rate information.

<table>
<thead>
<tr>
<th>Graduate Hours Registered for</th>
<th>Maximum Hours Per Week Permitted to Work</th>
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</thead>
<tbody>
<tr>
<td>15</td>
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</tr>
<tr>
<td>14</td>
<td>3 - 7.50%</td>
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<td>6 - 15.00%</td>
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<td>10 - 25.00%</td>
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<td>13 - 32.50%</td>
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<td>40 * - 100.00%</td>
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<tr>
<td>1</td>
<td>40 * - 100.00%</td>
</tr>
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</table>

**Registration**
Registration is directed by the Office of the Registrar. Tuition and fees are paid on the date of Official Registration as shown in the Academic Calendar in this Catalog. Late registration will be permitted during the first week of classes. A nonrefundable late registration fee of $25 will be assessed students registering late. No student will be permitted to register after the designated last day for late registration (one week after the first day of classes) indicated in the Academic Calendar.

Registration is not considered complete until tuition and fees (or installments) are paid.

The following actions are necessary preliminaries to registration each semester and summer session:
1. The student consults with the graduate advisor** to select specific courses for which to register in that term. These courses are listed on a Course Card which the advisor signs. (Courses which begin later in the term must also be reflected on the card.)
2. In general, the chair of the Committee on Graduate Studies will sign the course card for approval of courses.

* Present policy permits an employee to enroll in a 3-semester hour course without reduction in pay.
** The Associate Dean of the Graduate School acts as the Graduate Advisor for Special Students.
However, certain courses, marked by a double asterisk in the semester schedule, require the individual instructor’s signature on the card. The student then returns the card to the Graduate Advisor.

3. The Graduate Advisor submits completed Course Cards to the Graduate School Dean’s Office on or before the date indicated on the Academic Schedule of Events.

Course cards are available in the Graduate School Dean’s Office. The student must register each semester and summer session that he or she is enrolled in a course. This includes courses in Research, Thesis, Dissertation, and Supervised Teaching. No student can receive credit for a course for which he or she has not registered.

Semester Credit Hours
One semester hour of credit earned through:
1. Lecture clock hours: 15 to 18 (normally 16). Conference hours are equivalent to lecture hours.
2. Laboratory clock hours: 45 to 60 (normally 48).

For example, a course has a credit value of three semester hours if the class meets for three lecture hours per week in the 16-week fall or spring semesters, or meets for four lecture hours per week in the 12-week summer session.
A course with two lecture hours and six laboratory hours each week for one semester has a credit value of four semester hours.

Course Numbering System
The four-letter prefix denotes the graduate program presenting the course (BIOC, CLS, CSBL, MEDI, MICR, MMED, NURS, PHAR, PHYL, RADI, DENH). A course with INTD prefix is presented by an interdisciplinary group of faculty. The first digit denotes the academic level: 5-introductory graduate level, 6-advanced graduate level, 7-limited to Ph.D. candidates.

Full-Time Status
The minimum half-time course load for a semester is 4.5 semester hours and 3 in the summer. The minimum full-time course load for a semester is 9 semester hours and for a summer session is 6 semester hours. The maximum load is individually determined by the student’s faculty advisor and the Committee on Graduate Studies involved. If a student is employed as a teaching assistant, graduate assistant, research assistant, or tutor, the course load may be reduced correspondingly.

Adding Courses
Through the last day of late registration, a student may add one or more courses by obtaining the signed approval of the instructor(s), Graduate Advisor, and Associate Dean.
Add-course cards for this purpose may be obtained from the Graduate School Office. After the add-course card has been completed, it is submitted by the Graduate School Dean’s Office to the Registrar for recomputation of tuition and fees.

Dropping Courses
Through the ninth week of fall or spring semester or the seventh week of summer session, a student who is not on academic probation may drop a course provided the student is passing the course at the time and has the signed approval of the instructor, Graduate Advisor, and Associate Dean. Drop-course cards for this purpose may be obtained from the Graduate School Dean’s Office. After the drop-course card has been completed, it is submitted by the Graduate School Dean’s Office to the Registrar for recomputation of tuition and fees and possible refund. The Registrar will record the symbol Q if a course is dropped before the first evaluation period in that course. After that time, the course director will assign a grade of either WP (Withdrawn Passing) or WF (Withdrawn Failing). A student on academic probation will not be allowed to drop a course.

In case of illness and with the consent of the Associate Dean, a student may drop a course without penalty at any time prior to the beginning of final examinations.

Transfer of Credit
Credit for coursework taken at another institution may be transferred if the student submits a Request for Transfer of Credit form available in the Graduate School Dean’s Office. The same procedure should also be used to request transfer of credit from other schools within the Health Science Center. The transfer of credit is subject to approval by the Committee on Graduate Studies of the program in which the student is enrolled and by the Dean or the dean’s designee.

Students in M.S. programs may apply no more than 6 semester hours of transferred credit toward satisfaction of the 30 semester credit hours required for the degree. However, the request form should list all courses taken elsewhere which are approved by the Committee on Graduate Studies to satisfy the course requirements for the M.S. degree set forth by the program in which the student is enrolled.

Students in the Ph.D. programs are not obliged to fulfill a specific semester credit hour requirement. Transfer of credit for Ph.D. students may be requested to provide evidence on the student’s transcript of the completion of courses taken elsewhere which are approved by the Committee on Graduate Studies (1) to satisfy the course requirements for the Ph.D. degree or (2) to be appropriate to the specific course of study of the individual graduate student.

Registration for Thesis
Students in M.S. programs may register for the Thesis course (BIOC, CLS, CSBL, DENH, ENDO, MEDI, MICR, MMED, NURS, PERI, PHAR, PHYL, PROS, RADI, 6098) only after the following three actions have been taken:
1. Approval of admission to candidacy for the M.S. degree by the Associate Dean;
2. Approval of the thesis research proposal by the Committee on Graduate Studies of the program;
3. Appointment of a Supervising Committee for the thesis research by the Committee on Graduate Studies of the program.

A candidate for the M.S. degree must register for the thesis course for at least one term.
Registration for Dissertation
Students in Ph.D. programs may register for the Dissertation course (BIOC, CSBL, MICR, MMED, NURS, PHAR, PHYL, RADI 7099) only after all of the following three actions have been taken:
1. Approval of admission to candidacy for the Ph.D. degree by the Dean;
2. Approval of the dissertation research proposal by the Committee on Graduate Studies and the Associate Dean of the Graduate School must be obtained before the student may apply to another component for permission to register to take courses.
3. Approval of the membership of the candidate’s Supervising Committee by the Committee on Graduate Studies of the program and the Dean.

A candidate for the Ph.D. degree must register for the Dissertation course for at least two terms. Only one of the terms may be a summer session.

Registration for Final Term
It is a requirement that a student be registered for the semester or summer session in which he or she graduates.

Final Credit Hours
If a student is registering only for final credit hours (final semester or summer session) in preparation of a thesis or dissertation and registers for no other courses, the student is exempt from the minimum tuition requirement and pays tuition based upon the number of credit hours for which he or she registers. Such registration shall be considered a full-time course load. The minimum number of final credit hours for Ph.D. degree students is three; the minimum number for M.S. degree students is one. A student may register for final credit hours only once.

In Absentia (INTD 5004)
Students must be registered for the semester in which they graduate and all fees and tuition apply. A special arrangement is made for students who defend the dissertation or thesis after the last Graduate Faculty Council meeting of the semester and before the first class day of the following semester.

The student who expects to defend the dissertation or thesis in absentia should be designated as zero credit hours on the course card. The fee for in absentia registration is $25.00.

An add/drop card should be submitted to the Graduate Dean’s Office prior to the first class day of the new semester.

Registration at Other UT System Components
A student who has been formally admitted to a graduate program may apply to take courses at any of the other components of The University of Texas System. Consent of the Committee on Graduate Studies and the Associate Dean of the Graduate School must be obtained before the student may apply to another component for permission to register to take courses.

Registration for Audit
Permission to audit one or more courses is sometimes granted. Auditing conveys only the privilege of observing and excludes handing in papers or taking part in class discussion, laboratory exercises, or field work. No grade is given and no credit is recorded. Graduate students must obtain permission to register to audit a course from the instructor of the course and the Graduate Advisor of the program in which they are enrolled. Others who wish to register to audit a graduate course must apply to the Associate Dean of the Graduate School for admission as a Special Student.

Grading System
Credit hours are earned in the graduate programs only for the grades A, B, C and S. However, all A to F grades are included in the computation of the grade point average. Grade points are assigned as follows:

A = 4 (above average graduate work)
B = 3 (average graduate work)
C = 2 (below average graduate work)
D = 1 (failing graduate work)
F = 0 (failing graduate work)

Grades of D and F are not acceptable for graduate credit. If a course is repeated, the last grade earned is used in computing the cumulative grade point average.

A grade of S (satisfactory), U (unsatisfactory), or H (honors) is not included in the computation of the grade point average. These grades are given in the following courses in all programs: Literature Searching, Supervised Teaching, Research, Thesis, and Dissertation. Grades for Thesis or Dissertation hours are reported as “In Progress” (IP) until the work is completed. S/U grades are also given in PHAR 5090 and PHYL 6090 (Seminar) and CSBL 5074 (Introduction to Research). S/U and H (Honors) are given in CSBL 6071.

Other symbols used in reporting the standing of students in their classes are: WP and WF (see Withdrawal); Q (course dropped while receiving a passing grade with no penalty); I (Incomplete). The course director will record the symbol Q if a course is dropped before the first evaluation period in that course. After that time, the course director will assign a grade of either WP (Withdraw Passing) or WF (Withdraw Failing).

An I is used only to report cases in which the student has not completed all of the assignments and/or examinations before the conclusion of the course. Unless the student has been granted a leave of absence, all work must be completed within one year, at which time the grade of I (Incomplete) will be changed to the appropriate letter grade.

The grading system described above applies to courses in the medical and dental curricula in which graduate stu-
students may be enrolled as well as to courses in the graduate programs. Grades for courses taken to satisfy a contingency or condition of admission or those transferred for credit are not included in computation of the grade point average.

**Continuation, Probation, and Dismissal**

Continuation in the graduate programs is dependent upon three requirements:

1. Satisfactory progress in removing any conditions imposed at the time of admission;
2. Maintenance of a minimum cumulative B (3.0) average for all courses taken while enrolled in the Graduate School of Biomedical Sciences. A student whose cumulative grade point average falls below 3.0 will be placed on probation and warned by the Dean of the Graduate School that continuation in the graduate program is in jeopardy. A student will remain on probation as long as her or his cumulative GPA is below 3.0. While on probation, a student must maintain a B average in those courses for which he or she is registered or be considered for dismissal by the Committee on Graduate Studies. Except in the case of illness, permission to drop courses will not be given while the student is on probation. The graduate student who has been dismissed may be readmitted for further graduate study by petition from the Committee on Graduate Studies of her or his graduate program. The request will be considered by the Graduate Faculty Council and, according to the recommended action, will be approved or disapproved by the Dean. A student on probation may not be admitted to candidacy or awarded a degree. Grades achieved during enrollment as a special student are not used to determine academic probation.
3. A satisfactory rate of progress toward the degree as determined by the Committee on Graduate Studies is required throughout the student’s enrollment. The Committee, with the Dean’s consent, may terminate a student’s enrollment for lack of satisfactory progress.

**Withdrawal**

Permission for withdrawal from a graduate program may be granted by the Dean or Associate Dean upon concurrence by the Committee on Graduate Studies of the program. The student who wishes to withdraw should complete and sign the upper portion of the Administrative Clearance Form (available from the Graduate School Office), submit the form for signature to the COGS Chair and a Graduate School dean, and then obtain authorized signature clearance from each area listed on the lower portion of the form.

In the case of withdrawal before the end of the semester or summer session (and thus the dropping of all courses), the grading symbol WP or WF will be recorded for each course not completed, depending on the student’s standing on the last day of enrollment. In the case of withdrawal at the end of a semester or summer session, the appropriate grading symbol will be recorded for each completed course.

An application for readmission by a student who has previously withdrawn is subject to the same requirements, procedures, and acceptance considerations that apply to first-time applicants.

**Leave of Absence**

Permission for a leave of absence from a graduate program for a maximum period of one year may be granted by the Dean subject to prior approval by the Committee on Graduate Studies of the program. Such permission will be granted only for extenuating circumstances and indicates that the student will be allowed to return to the program within the one-year time limit. There is no guarantee that a stipend will be reinstated upon return.

The student should make a written request for a leave of absence to the Chair of the Committee on Graduate Studies for her/his program, including the reasons for the request and the expected time of return. If the request for leave of absence is approved, the student is so notified by a letter from the Dean and provided by the Graduate School Dean’s Office with an Administrative Clearance Form. The student should then complete and sign the upper portion of this Form, obtain on it the signatures of the COGS Chair and a Graduate School dean, and obtain authorized signature clearance from each area listed on the lower portion of the Form. The student should also schedule an exit interview with the Associate Dean.

**Nonregistration**

A student enrolled in a graduate program who has not registered for two consecutive terms will be considered for dismissal from the program unless prior official permission for a leave of absence has been granted. The Registrar will notify the Committee on Graduate Studies and the Dean of the student’s failure to register.

If dismissed, the student may reapply for admission. Such application is subject to the same requirements, procedures, and acceptance considerations that apply to first-time applicants.

**Transfer Between Graduate Programs**

Any student who wishes to change the course of study from one graduate program to another must make written application to that program, and the application is subject to the same requirements, procedures, and acceptance considerations that apply to other applicants to the program. Students who wish such a transfer must have an interview with the Dean.

**Graduation**

The degree of Doctor of Philosophy is awarded by the Board of Regents upon the satisfactory completion of a prescribed program of study as documented by the Committee on Graduate Studies, recommendation of the
Graduate Faculty Council, and certification of the candidate by the Dean and President to the Board of Regents.

The degree of Master of Science is awarded upon the satisfactory completion of a minimum of 30 semester hours, the requirements particular to each graduate program as documented by the Committee on Graduate Studies, recommendation of the Graduate Faculty Council, and certification of the candidate by the Dean and President to the Board of Regents.

Sequential Procedures
Doctor of Philosophy Degree

Phase I. (From matriculation through admission to candidacy.)

1. Assignment of faculty advisor. The Committee on Graduate Studies assigns a member of the graduate faculty as advisor to each student entering a program. The advisor serves as counselor on academic matters and monitors the student’s progress in (a) successfully completing contingencies of admission and course requirements of the program and (b) selecting an area of research specialization.

2. Approval of research advisor. When the student selects the area of research specialization and the faculty member to serve as research preceptor, the Committee on Graduate Studies reviews the proposed selections. If the selections are approved, the faculty member is designated by the Committee on Graduate Studies as the student’s research advisor in concert with, or in replacement of, the original faculty advisor. The faculty advisor may, of course, be selected as the research advisor. During this period, the student’s potential for productive and independent investigation is assessed by the research advisor.

3. Qualifying examination. The Qualifying Examination is comprehensive in nature and may be written, oral, or both. The Committee on Graduate Studies determines the format of the examination and the composition of the Qualifying Examination Committee, with the proviso that one member must be from other than the graduate faculty of the student’s program. The Qualifying Examination Committee administers the examination(s), evaluates the student’s performance, and reports its judgment on whether the student passed or failed to the Committee on Graduate Studies.

4. Admission to candidacy. Recommendation by the Committee on Graduate Studies that the student be admitted to candidacy for the Doctor of Philosophy degree requires the following:
   (a) Satisfactory completion of all required courses;
   (b) Cumulative grade point average of at least 3.0 in all coursework undertaken since matriculation in the program;
   (c) Report by the Qualifying Examination Committee that the student has passed the examination;
   (d) Report by the student’s research advisor and other graduate faculty members, as appropriate, that the student has clearly evidenced the potential for productive and independent investigation.

If, in its overall evaluation of the eligibility of the student for admission to candidacy, the Committee on Graduate Studies is in favor of admission, it shall submit a Petition of Admission to Candidacy Form (GSBS Form 32) to the Dean for approval with documentation of satisfaction of the requirements listed above. Each research advisor is required to sign the form to certify her/his view of the student’s potential for productive and independent investigation.

The Dean may approve or disapprove the recommendation or request further documentation. When the Dean has approved admission of the student to candidacy, the candidate enters Phase II of the program.

Phase II. (From admission to candidacy through granting of the degree.)

5. Selection of the supervising professor. No later than three months after the student’s admission to candidacy, the member of the graduate faculty of the program who will serve as the supervising professor of the dissertation research shall be decided upon by mutual agreement among the candidate, the faculty member, and the Committee on Graduate Studies. Normally, the research advisor who guided the student’s preliminary research activities continues as supervising professor, but this arrangement is not obligatory.

6. Draft of dissertation research proposal. The candidate shall identify a research question which will serve as a focus for the dissertation research. The candidate shall prepare a draft of a research proposal which specifies the research to be undertaken, its significance in the scientific field, and the general methods and techniques to be utilized. The proposal shall be submitted to the supervising professor for review and modification. Subsequent drafts of the proposal should then be submitted for review and modification to other faculty members who have knowledge and expertise in the area of the research proposal and who have been selected by mutual agreement among the candidate, the supervising professor, and the Committee on Graduate Studies. The final draft of the dissertation research proposal is subject to review and approval by the Committee on Graduate Studies, which may specifically designate a group of faculty members to review the proposal draft(s).

7. Nomination of the supervising committee. After approval of the proposal by the Committee on Graduate Studies, the supervising professor and the candidate shall make recommendations to the Committee on Graduate Studies regarding the
composition of the Supervising Committee for the dissertation research. The Supervising Committee must consist of at least five persons, as follows:

(a) The supervising professor, designated as Supervising Professor and Chair of the Supervising Committee;
(b) One member must be from outside the Health Science Center and must be an expert in the field of the proposed dissertation;
(c) Two members must be members of the graduate faculty of the program;
(d) One member must be a faculty member of the Health Science Center in a supporting area outside the program but need not necessarily be a member of the graduate faculty.

The Committee on Graduate Studies may nominate additional members in categories (b), (c), and (d) if necessary. Nomination is contingent upon the willingness of the designated person to serve on the Supervising Committee. The composition of the Supervising Committee should, in principle, provide a group of research scientists who constitute an important resource to the candidate and her or his dissertation research. Their functions are, with the Supervising Professor, to guide the candidate through the dissertation research and to certify to the Committee on Graduate Studies that the candidate has, in fact, carried out a meritorious research investigation of the caliber appropriate for a Ph.D. dissertation and, in their opinion, defended it satisfactorily. Upon selection of the supervising committee, the chair of the Committee on Graduate Studies (COGS) will submit to the Graduate Dean’s office a completed Form 30 Recommendation for Approval of Dissertation Research Proposal and Supervising Committee.

8. **Approval of the dissertation proposal and supervising committee.** The Graduate Faculty Council and the Dean will review the recommendation of COGS on the proposal and supervising committee. After approval by the Dean of both the proposal and the Supervising Committee, the candidate may register for the Dissertation course (_____ 7099). Any subsequent change in the Composition of the Supervising Committee must be approved by the COGS and approved by the Associate Dean, who will then report the change at a regularly scheduled GFC meeting.

9. **Supervision of the dissertation research.** Within one month after formal approval of the Supervising Committee, the Supervising Professor shall convene the Supervising Committee to discuss with the candidate the progress of the dissertation research and the projected future work. At appropriate intervals thereafter (at least every six months), the Supervising Committee shall meet with the candidate for presentation of progress reports (written and/or oral), so that current status of the research may be evaluated and direction of future work planned. If the external Committee member is unable to attend these meetings, it is the responsibility of the candidate and the Supervising Professor to provide this member with progress reports for review and recommendations. It is essential that the Supervising Committee be fully informed of the research progress and be able to provide continued supervision throughout and that the Committee on Graduate Studies receive reports of the research progress from the Supervising Committee after each of its meetings with the candidate. The Supervising Committee and/or the Committee on Graduate Studies may approve or direct alterations in the research plans within the general context of the dissertation proposal. Major changes in the candidate’s research status (such as selection of a new Supervising Professor, new Supervising Committee members, or a new research question) must be reported to the Graduate Faculty Council and the Dean for consideration.

10. **Submission of the dissertation.** After agreement by the members of the Supervising Committee that the research has progressed sufficiently for submission of the dissertation, the draft of the dissertation shall be submitted to the Supervising Professor and then to all other members of the Supervising Committee and the Associate Dean for their review and recommendations for modification. It is the responsibility of the candidate to follow the guidelines for preparation of the dissertation provided by the Graduate School Dean’s Office in Instructions for Preparation and Submission of Theses, Dissertations and Dissertation Abstracts, or if the alternative format appears to be preferable, to obtain approval for such format from the Supervising Committee and the Committee on Graduate Studies. The candidate also has the responsibility to ensure adequate time for review and modification of the dissertation in accordance with the schedule of deadlines provided each term by the Graduate School Dean’s Office.

11. **Final oral examination.** When the Supervising Committee judges the dissertation to be suitable for defense, it shall submit a Request for Final Oral Examination Form (GSBS Form 40) through the Committee on Graduate Studies to the Dean and request scheduling of the Final Oral Examination. Twenty-two copies of the Abstract and Vitae (stapled together) should accompany the Request for Final Oral Examination Form at the time it is submitted to the Graduate School Office. Public announcement of the Final Oral Examination is made by the Graduate School Office. This Examination is conducted by the Supervising Committee with the Supervising Professor as chair. Interested persons may attend the public defense and have the right to question the candidate. After the public defense, the Final Oral Examination continues with an intensive oral examination by the Supervising Committee which is not customarily open to the public. The Supervising Committee members vote on the candidate’s success or failure on the Final Oral Examination; more than one vote for failure
candidacy.)

Phase I. (From matriculation to admission to Sciences Programs)

Master of Science Degree (Biomedical Sciences Programs)*

**Phase 1. (From matriculation to admission to candidacy.)**

1. Assignment of faculty advisor. Same as above for Ph.D. degree.

2. Approval of research advisor. Same as above for Ph.D. degree.

3. Qualifying examination. The Graduate School of Biomedical Sciences does not require a comprehensive Qualifying Examination prior to admission to candidacy for the M.S. degree. However, the Committee on Graduate Studies may require the student to pass a written and/or oral Qualifying Examination prior to consideration for admission to candidacy, or it may waive such examination.

4. Admission to candidacy. Same as above for Ph.D. degree except that the Qualifying Examination may be waived. GSBS Form 31 should be submitted to the Dean for approval.

**Phase II. (From admission to candidacy through granting of the degree.)**

5. Selection of supervising professor. No later than one month after the student’s admission to candidacy, the member of the graduate faculty of the program who will serve as the supervising professor of the thesis research shall be decided upon by mutual agreement among the candidate, the faculty member, and the Committee on Graduate Studies. Normally, the research advisor who guided the student’s preliminary research activities continues as supervising professor, but this arrangement is not obligatory.

6. Draft of the thesis research proposal. No later than three months after admission to candidacy, the candidate shall submit a draft of a proposal for the thesis research to the supervising professor for review and modification. Subsequent drafts of the proposal may then be submitted for review and modification to other faculty members who have knowledge and expertise in the area of the research proposal. After approval of the final proposal draft by the supervising professor, the proposal is submitted to the Committee on Graduate Studies for consideration of approval.

7. Appointment of the supervising committee. After approval of the thesis proposal by the Committee on Graduate Studies, the supervising professor and the candidate shall make recommendations to the Committee on Graduate Studies regarding the composition of the Supervising Committee for the thesis research. The Supervising Committee must consist of at least four persons, as follows:

(a) The supervising professor, designated as Supervising Professor and Chair of the Supervising Committee;

(b) Two members must be members of the graduate faculty of the program;

(c) One member must be a faculty member of the Health Science Center in a supporting area.

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* The Sequential Procedures for the thesis-option Master of Science in Nursing degree and the Master of Science degree in dental specialties are modified to correlate with the curricula of these programs. A copy of the appropriate Sequential Procedures may be obtained from the Graduate Advisor of the program.
outside the program but need not necessarily be a member of the graduate faculty.

Immediately upon selection of the Supervising Committee, the Chair of the Committee on Graduate Studies will submit to the Graduate School Dean’s Office a completed Form 42 Composition of Supervising Committee — The Master of Science Degree. A copy of the proposed work in electronic form must accompany the form. Each member of the Supervising Committee is required to sign the form to certify her/his approval to serve on the committee. Any subsequent change in the Composition of the Supervising Committee must be approved by the COGS and approved by the Associate Dean, who will then report the change at a regularly scheduled GFC meeting.

The members of the Supervising Committee shall be appointed by the Committee on Graduate Studies, and such appointments shall be contingent upon the willingness of the designated persons to serve. The composition of the Supervising Committee should, in principle, provide a group of research scientists who constitute an important resource to the candidate and her or his thesis research. Their functions are, with the Supervising Professor, to guide the candidate through the thesis research and to certify to the Committee on Graduate Studies that the candidate has, in fact, carried out a meritorious research investigation of the caliber appropriate for an M.S. thesis and, in their opinion, defended it satisfactorily.

8. **Supervision of the thesis research.** Within one month after appointment of the Supervising Committee, the Supervising Professor shall convene the Supervising Committee to discuss with the candidate the progress of the thesis research and the projected future work. At appropriate intervals thereafter, the Supervising Committee shall meet with the candidate for progress reports (written and/or oral) so that current status of the research may be evaluated and direction of future work planned. It is essential that the Supervising Committee be fully informed of the research progress and be able to provide continued supervision throughout and that the Committee on Graduate Studies receive reports of the research progress from the Supervising Committee after each of its meetings with the candidate.

9. **Submission of the thesis.** After members of the Supervising Committee agree that the research has progressed sufficiently for submission of the thesis, the draft of the thesis shall be submitted to the Supervising Professor and then to the other members of the Supervising Committee and the Associate Dean for their review and recommendation for modification. It is the responsibility of the candidate to follow the guidelines for preparation of the thesis provided by the Graduate School Dean’s Office in Instructions for Preparation and Submission of Theses, Dissertations and Dissertation Abstracts or, if an alternative format appears to be preferable, to obtain approval for such format from the Supervising Committee and the Committee on Graduate Studies. The candidate also has the responsibility to ensure adequate time for review and modification of the thesis.

10. **Final oral examination.** The Graduate School requires that the thesis be defended by the candidate in a Final Oral Examination conducted by the Supervising Committee; the format in which this examination is conducted (see Options 1 and 2 below) shall be decided by the Committee on Graduate Studies and shall be uniform for all M.S. candidates in that program.

   **Option 1.** If the Committee on Graduate Studies does elect to require that the thesis be defended in formal Final Oral Examination scheduled through the Graduate School Dean’s Office and open to all interested persons, then the procedures in number 11 (see “Phase II” of “Doctor of Philosophy Degree”) for Ph.D. candidates should be followed.

   **Option 2.** If the Committee on Graduate Studies chooses a less formal format, without public notification through the Graduate School Dean’s Office, the following procedures apply. The Request for Final Oral Examination Form (GSBS Form 40), signed by the Supervising Committee members, should be submitted to the Chair of the Committee on Graduate Studies, who shall indicate approval by signature and transmit the Request to the Graduate School Dean’s Office for approval by the Associate Dean.

Two copies of the Abstract and the Vita should be submitted with the Request for the candidate’s files in the Registrar’s Office and the Graduate School Dean’s Office.

The Supervising Committee members vote on the candidate’s success or failure on the Examination; more than one vote for failure signifies failure on the Final Oral Examination. The Supervising Committee submits the Report on Final Oral Examination (GSBS Form 41) to the Committee on Graduate Studies. In the event of a failing performance by the candidate, the Supervising Committee shall also submit to the Committee on Graduate Studies a recommendation regarding remedial action or further examinations; in such case, the Committee on Graduate Studies shall decide upon the recommendation or other action to be taken. In the event of a successful performance by the candidate, the Committee on Graduate Studies shall vote on whether to approve the recommendation by the Supervising Committee for granting of the degree.
11. **Recommendation for granting of the degree.** If the Committee on Graduate Studies approves the favorable recommendation by the Supervising Committee, the Chairman of the Committee on Graduate Studies shall so indicate by signature on the Report on Final Oral Examination and submit the Report to the Graduate Faculty Council for consideration. The candidate shall submit to the Graduate School Dean’s Office the final typed copy of the thesis (including the thesis Approval Page signed by the Supervising Committee members) ready for duplication. When both the Report and the thesis copy have been received, the Graduate Faculty Council will consider the recommendation for granting the degree. If the Council does not approve the recommendation, it will refer the matter to the Committee on Graduate Studies with a recommendation for remedial action. If the Council does approve the recommendation, the Dean of the Graduate School of Biomedical Sciences will notify the President of The University of Texas Health Science Center at San Antonio that the candidate has fulfilled all requirements for the degree Master of Science. Upon the candidate’s certification by the President, the degree is conferred by the Board of Regents of The University of Texas System.

(See “Registration for Thesis,” “Registration for Final Term,” and “Graduation” previously discussed in this section.)

**Sequential Procedures Forms**

The following forms, required for the sequential procedures described above, are available from the Graduate School Dean’s Office:

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<th>Form No.</th>
<th>Procedure</th>
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<td>43</td>
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A completed *Application for Degree and Diploma Name Request* must be filed during the semester before the term in which the candidate expects to graduate. This form is available from the Registrar’s Office or the Graduate School Dean’s Office.

**Instructions for Preparation and Submission of Theses, Dissertations, and Dissertation Abstracts**

These instructions should be obtained from the Graduate School Dean’s Office by the candidate before he or she begins to write the thesis or dissertation.

**BIOCHEMISTRY**

The graduate program in Biochemistry offers graduate and postgraduate study designed to give the student the opportunity to become competent to conduct independent biochemical research and to participate in developing and transmitting scientific knowledge in an academic, industrial, or clinical environment. While the Doctor of Philosophy program is emphasized, a Master of Science degree is also available.

The graduate curriculum is designed to provide a synergistic program of formal courses, seminars, teaching opportunities, and individualized biochemical research experience in the laboratory of participating faculty. In addition, students are encouraged to broaden their scientific experience by taking courses in areas such as chemistry and its subdisciplines, biophysics, microbiology, and physiology.

Independent research experiences are available in many areas of biochemistry and molecular biology including: protein structure and function, metabolic regulation, membrane assembly, recombinant DNA technology, control of gene expression, mapping of eukaryotic genomes, assembly of viruses, and the mechanisms of hormone action. Application of the basic research conducted in the department is stressed by collaborative research programs carried out with faculty members in other basic science and clinical departments.

**Research Activities**

The ongoing research programs being pursued in the laboratories of the participating faculty in the graduate Biochemistry program cover a wide range of biochemical problems and are supported by grants from both federal and private funding agencies. Extensive instrumentation and facilities are available for the study of a myriad of biochemical problems using nearly any modern analytical approach.

Facilities, including a wide variety of centrifugation equipment, are available for the fractionation of various types of cellular material. Diverse compounds can be characterized using gas or high pressure liquid chromatography and any modern electrophoretic procedure. Facilities for mapping and sequencing DNA are available. Studies of protein structure and function can be performed with a protein sequenator, an amino acid analyzer, analytical ultracentrifuges, NMR spectrometers, X-ray diffractometer, and computerized molecular modeling instrumentation. A DNA synthesizer is available for analyzing gene function. The department is well equipped with a wide variety of absorption and emission spectrophotometers including spectrophotofluorimeters and equipment for circular dichroism which can be used for the identification of compounds, the elucidation of macromolecular structures, the characterization of interactions involving macromolecules and for the study of a variety of kinetic phenomena that are important in understanding biological systems.
Most forms of contemporary fluorescence digital imaging microscopy are available to investigate the fluorescent properties of isolated cells and membranes. Additionally, a fermentation facility for producing large quantities of cellular material for the purification of wild type and genetically engineered macromolecules has been established. Numerous liquid scintillation counters and a gamma counter are available for use in the many areas of biochemistry in which radioisotopes are used.

Requirements for Admission
At the time of admission, applicants must have earned a bachelor’s degree and have credit for one year’s undergraduate work in the following areas: biology, organic chemistry, physical chemistry, physics, and mathematics through integral calculus. Applicants lacking one of these requirements may receive acceptance contingent upon satisfactory completion of this requirement. In general, the undergraduate grade point average no lower than B (3.0 in a 4.0 system), and combined scores (verbal + quantitative) on the Graduate Record Examination General (Aptitude) Test of at least 1000 are preferred.

Financial Support for Graduate Students
Every effort is made by the Department of Biochemistry to provide financial aid to students enrolled in the graduate program. Such financial support is provided through teaching assistantships from the department and research assistantships from grants of individual faculty members.

Postgraduate Positions for Program Graduates
Graduates of the Ph.D. program in Biochemistry are expected to be in a favorable position to seek further postdoctoral training and to be in a highly competitive position for academic appointments at state and private institutions or employment in industrial and government laboratories.

Curriculum
Students pursuing the Doctor of Philosophy degree will be expected to acquire a comprehensive knowledge of biochemistry, which will be determined by performance in coursework and an oral defense of an original research proposition presented at the beginning of the third academic year. Although no minor area is required, students are encouraged to diversify their programs with courses offered in other departments at the Health Science Center. A dissertation, which represents an original contribution to the field of biochemistry and which is of publishable quality in reputable, scholarly journals is required of all candidates for the Doctor of Philosophy degree.

The faculty expects students entering the graduate program in Biochemistry to pursue studies leading to a Ph.D. degree. When, however, a student is admitted to pursue a Master of Science degree, the requirements are less rigorous than those for the Ph.D. degree. These requirements are met by coursework and a research thesis which is defended in an oral examination.

Core Courses
Introductory graduate level courses cover fundamental information in biochemistry and molecular and cellular biology required in the education of a modern biomedical scientist. Topics covered in the core courses are organized in a coordinated and nonredundant manner and taught by an interdisciplinary group of faculty.

INTD 5005 Core Course I: Biochemistry
4.0 Semester Credit Hours
Topics to be covered include: protein structure; properties of enzymes; structure, biosynthesis and function of lipids; pathways and regulation of carbohydrate metabolism and biosynthesis and regulation of amino acids, nucleotides and related compounds.

INTD 5006 Core Course II: Molecular Biology
4.0 Semester Credit Hours
Topics to be covered include: nucleic acid structure; methods used in molecular biology; basic concepts of prokaryotic and eukaryotic molecular genetics; DNA replication, repair and rearrangements; RNA biosynthesis and regulation in prokaryotes and eukaryotes and protein biosynthesis and regulation in prokaryotes and eukaryotes.

INTD 5007 Core Course III: Cell Biology
4.0 Semester Credit Hours
Topics to be covered include: structure and function of biological membranes; cell signaling mechanisms; structural and functional organization of the nucleus; intracellular protein sorting; cytomatrix and cell movement; cell adhesion and extracellular matrix; and cell reproduction.

BIOC 5081 Biochemical Techniques Lab
Credit to be arranged
This course is designed to introduce first-year graduate students in biochemistry to use of modern biochemical techniques and instruments and to research. The course is based on rotations in the laboratories of faculty members in the Department of Biochemistry.

BIOC 5074 Orientation to Biochemistry
1.0 Semester Credit Hour
Prerequisite: Consent of instructor
A course designed to give first-year graduate students in biochemistry experience in critically reading the biochemical literature. The use of the library, verbal presentation of research findings to small groups, and formulation and defense of research proposals will be emphasized.

BIOC 5091 Special Topics in Biochemistry
Credit to be arranged
Prerequisite: A survey course in biochemistry
Selected topics in specialized areas of biochemistry; current views will be emphasized.

BIOC 5091 Special Topics in Biochemistry: Quantitative Biochemistry
1.0 Semester Credit Hour
This course presents procedures for quantitatively analyzing data generated in typical biochemical experiments. Concepts and
procedures related to databases, statistics, error analyses, and graphical analyses will be discussed. Use of software to accomplish such quantitative determinations will be emphasized.

**INTD 6002 Ethics in Research**  
*0.5 Semester Credit Hour*  
This course will deal with topics relevant to ethics in scientific research. The course will be taught on a “case study” basis, dealing with real and hypothetical situations relevant to the conduct of scientific research. Topics discussed will include, but will not be limited to: data management, peer review, recognizing scientific misconduct, authorship, and The University of Texas regulations relevant to human and animal research.

**BIOC 6071 Supervised Teaching**  
*1.0 Semester Credit Hour*  
Teaching medical or dental biochemistry under close supervision of instructors. Management of small conference teaching groups as well as formal lecture presentations will be included.

**BIOC 6097 Research**  
*Credit to be arranged*  
Independent, original research under the direction of a faculty advisor.

**BIOC 6098 Thesis**  
*Credit to be arranged*  
Prerequisite: Admission to candidacy for the M.S. degree  
Registration for at least one term is required of M.S. candidates.

**BIOC 7099 Dissertation**  
*Credit to be arranged*  
Prerequisite: Admission to candidacy for the Ph.D. degree  
Registration for at least two terms is required for Ph.D. candidates.

**BIOC 6028 Biophysical Chemistry**  
*3.0 Semester Credit Hours*  
Prerequisite: INTD 5005 Biochemistry  
Emphasis of the course will be to familiarize the student with: 1) the quantitative aspects of biochemistry, e.g., biochemical calculations, data and error analysis and statistics; 2) the use of computers in data acquisition, data analysis and fitting of equations to data; and 3) modern biophysical techniques, to give students the opportunity to read and understand recent publications utilizing these methods.

**BIOC 0003 Scientific Writing**  
*1.0 Semester Credit Hour*  
Consists of writing a progress report describing research results for the semester. Required of all graduate students beginning in the first semester after selection of a supervising professor.

**Advanced Courses**

Six of the eight advanced courses offered are required for the Ph.D. degree. A prerequisite for the advanced courses is INTD 5005 Biochemistry.

**BIOC 5091 Special Topics in Biochemistry: Protein Structure and Molecular Modeling**  
*2.0 Semester Credit Hours*  
This course describes the rationale and procedures for accessing, manipulating, modifying, analyzing, modeling, comparing, and presenting macromolecular structures and sequences. Such concepts and analyses will provide students the opportunity to develop and test structure-based mechanistic and structure-function hypotheses. Hands-on methods and software to accomplish the analyses will be taught.

**BIOC 6032 Assembly and Function of Multimolecular Complexes**  
*2.0 Semester Credit Hours*  
To give students the opportunity to understand how macromolecules cooperate to achieve a biologically-evolved purpose, the lectures of this course discuss both the assembly of macromolecules and transitions of assembled complexes. In the first part of the course, the following subdisciplines are covered: symmetry of assembled complexes, techniques for determining the structure of both unique and variable complexes, the isolation of assembly intermediates, excluded volume effects during assembly, release of water during assembly, principles of biological energy transduction, genetic manipulation of assembly pathways and the use of expression vectors for obtaining purified assembly intermediates. The leading edge of research is discussed for the assembly of both bacterial and animal viruses. In the second part of the course, a detailed description is given of both the components and structure of both microtubules and other filamentous components of eukaryotic cells. Both the assembly and transitions of microtubules are discussed. The mechanisms are explored for production of purposeful biological motion by both actin-myosin complexes and microtubule motors.

**BIOC 6033 Cellular Signaling Mechanisms**  
*2.0 Semester Credit Hours*  
This course covers the molecular mechanisms of action of various extracellular mediators including hormones, neurotransmitters, growth factors, cytokines, etc. and cell signaling events. Several areas will be discussed including (1) mechanisms of mediator synthesis, (2) interaction of mediators with specific receptors, (3) modulation by mediators of various second messenger systems including cyclic nucleotides, inositol phospholipids, calcium, protein phosphorylation, ion flux, etc. and (4) intra- and intercellular mechanism for regulating mediator action.

**BIOC 6054 Enzymology**  
*2.0 Semester Credit Hours*  
The objectives of this course are to describe practical aspects of measuring enzymatic activity; to derive the kinetic equations for one- and two-substrate enzyme-catalyzed reactions based on rapid-equilibrium and steady-state assumptions; to describe the analysis of kinetic data to obtain values of basic parameters for an enzyme-catalyzed reaction; to describe kinetic models of allosteric enzymes; and to describe some aspects of the mechanisms of enzyme catalysis such as complementarity in ligand binding and transition state analogs.
BIOC 6063 Molecular Genetics and Biotechnology
2.0 Semester Credit Hours
This course will cover developments in molecular genetics and molecular biology relevant to the modern practice of biochemistry. As a prerequisite, students will be expected to have completed the core graduate course in molecular biology (INTD 5006). This advance course should enable students to identify viable molecular biological approaches to biochemical projects and to correctly evaluate the relevant merits and limitations of these approaches.

BIOC 6027 Molecular Targeting and Regulation
2.0 Semester Credit Hours
A study of the mechanism and regulation of protein biosynthesis in prokaryotes and eukaryotes; post-translational modifications of proteins; targeting of proteins to various subcellular compartments.

BIOC 6026 Nuclear Proteins
2.0 Semester Credit Hours
The role of proteins in regulating and integrating nuclear processes will be considered in detail. Structural proteins, enzymes and regulatory proteins such as transcription factors are key components in the flow of genetic information through the processes of DNA replication and repair, transcription and RNA processing. The biosynthesis, properties, regulation and mechanisms by which these proteins regulate nuclear processes will be examined using a combination of lecture presentations and in-depth consideration of original literature sources.

Electives
BIOC 1005 Cell and Molecular Biology
8.5 Semester Credit Hours
Prerequisites: General chemistry, organic chemistry and physics
This course is designed for medical students and may be taken for graduate credit only under unusual circumstances. Topics included are the chemistry and metabolism of carbohydrates, lipids, amino acids, proteins and nucleic acids.

BIOC 5013 Dental Biochemistry
5.5 Semester Credit Hours
Prerequisites: Organic chemistry, biology, and consent of instructor
This course is primarily designed as a survey course for dental students. On a limited basis, a small number of graduate students may be accommodated. The course is basically a brief survey of the metabolism of the major classes of foodstuffs. A portion of the course deals with matters relating to the biochemistry of the oral cavity.

INTD 5043 Fundamentals of Neuroscience
4.0 Semester Credit Hours
This course is intended to introduce students to a broad survey of the basics of neuroscience. The course is organized into a series of modules discussing levels of neurobiological functions that range from molecular through behavioral and cognitive processes, and covering topics such as action potential, molecular mechanisms of synaptic release, neurotransmitters systems, autonomic regulation, the limbic system, sensory and motor processing, motion, cognition, and neuropsychiatric disorders.

BIOMEDICAL ENGINEERING

The Ph.D. in Biomedical Engineering program is jointly offered between The University of Texas Health Science Center at San Antonio (UTHSCSA) and The University of Texas at San Antonio (UTSA). This program trains scholars in the use of basic biomedical engineering approaches for the investigation of fundamental biomedical questions associated with the diagnosis and treatment of human diseases.

As this is a multidisciplinary program, the curriculum is designed to provide a synergistic program of formal courses, seminars, teaching opportunities, interactions with clinicians, and individualized biomedical engineering research experience in the laboratory of the biomedical engineering faculty. Students in this program have access to the bioengineering and biosciences laboratories at both UTHSCSA and UTSA. This provides a unique opportunity to have learning experiences in medical, dental, biosciences, and engineering environment.

Research Activities
Biomedical Engineering research activities are conducted both at UTHSCSA and at UTSA. At UTHSCSA, research activities include measuring and imaging the anatomy, chemistry, and function of the body and the brain using the latest positron emission tomography and other imaging technology. The Research Imagining Center leads international brain mapping research. The Center for Clinical Bioengineering concentrates on research into connective tissues, immunology, and oral health, and promotes the use of biomedical engineering for biomaterials, biomechanics and tissue engineering research. It houses state-of-the-art analytical tools for materials characterization and provides an interface between academic research and industry.

Research at UTSA occurs at several graduate research laboratories, which include Coding, Communication & Control, Intelligent Systems, Digital Systems & Instrumentation, Biomechanics/Biomaterials, CNC & Robotics, Image Processing and Structural & Dynamics. Other research facilities that support existing programs in the sciences are housed primarily in the Science and Biosciences Buildings.

Requirements for Admission
The following general minimum requirements are needed for application to the Ph.D. in Biomedical Engineering program:

1. A minimum of a bachelor’s or master’s degree, with emphasis either in engineering, physical science or biological science from an accredited institution in

* A Master of Science in Biomedical Engineering also will be available.
the United States or proof of an equivalent degree and training at a foreign institution.

2. A minimum grade point average of no lower than B (3.00 in a 4.00 system) in the last 60 hours of undergraduate and/or graduate coursework.

3. A satisfactory score for the combined verbal and quantitative portions of the Graduate Record Examination.

4. A minimum score of 550 on the Test of English as a Foreign Language (TOEFL) for applicants from countries where English is not the native language.

Admission to the Ph.D. in Biomedical Engineering program is very competitive and that satisfaction of the above minimum requirements does not guarantee admission to the program. All students are required to have sufficient background in engineering, chemistry, biology, and/or physics prior to being admitted to the program. The Committee on Graduate Studies in Biomedical Engineering will also consider applicants who have a strong educational or research background in bioengineering, but no formal degree in engineering, physical sciences or biological sciences. These applicants will be advised of the need for remedial courses, if any, which will then have to be satisfied prior to admission to the program.

Financial Support for Graduate Students

Competitive stipends are available to students on an annual basis. Students are required to apply annually for these competitive stipends. Students supported with stipends are required to maintain their GPA of 3.5 during the supported year and are also required to fulfill academic duties such as being a teaching assistant, laboratory assistant, and conducting seminars. Students are also encouraged to seek other financial aids such as the NSF Graduate Research Fellowship (see http://www.nsf.gov for details on application and deadline) and aids from Biomedical Engineering faculty through assistantship.

Postgraduate Positions for Program Graduates

Career opportunities for graduates from this program include positions in research institutes, biomedical and medical industries, government laboratories such as NIST and FDA, and academic institutions. For graduates who are interested in applying their biomedical engineering knowledge to patient care, they have the opportunity to pursue a career in medicine and dentistry by applying to the medical and dental schools.

Curriculum

Biomedical Engineering is a multidisciplinary program. As such, a student can specialize in one of the several areas offered by this Ph.D. program. The areas of specialization are 1) Musculoskeletal Biomaterials, 2) Cardiovascular Biomaterials, 3) Neuro-systems Biomaterials, 4) Musculoskeletal Biomechanics, 5) Cardiovascular Biomechanics, 6) Neuro-systems Biomechanics, 7) Musculoskeletal Bioelectronics and Bioimaging, 8) Cardiovascular Bioelectronics and Bioimaging, and 9) Neuro-systems Bioelectronics and Bioimaging. However, regardless of the specialized areas, all students are required to take all the core courses, with the exception of choosing either Physiology or Gross Human Anatomy within the core courses curriculum. Overall, students have to complete a minimum of 81 hours of graduate work and must maintain an overall grade point average of at least 3.0 for graduation.

Core Courses

Bioimaging and Electronics
3.0 Semester Credit Hours
Prerequisite: Graduate standing
Imaging and stimulation techniques such as MRI, PET, and TMS will be discussed. Relevant electronic and computational systems for these techniques will be addressed.

Biomaterials
3.0 Semester Credit Hours
Prerequisite: Graduate standing
Natural and synthetic biomaterials, including polymers, ceramics, metals, and composites will be discussed. The properties and applications of these materials will be addressed. Particular emphasis will be placed on biomaterials used in the orthopaedic, dental, and cardiovascular arenas.

Biomechanics
3.0 Semester Credit Hours
Prerequisite: Graduate standing
Theories and experiments of continuum mechanics principles of hard and soft tissues will be addressed. The mechanical behavior of bone, cartilage, tendon, ligament and muscle (including cardiac tissue) will be discussed in terms of the tissues’ structure-function relationships.

INTD 6002 Ethics in Research (UTHSCSA)
0.5 Semester Credit Hour
Prerequisite: Graduate standing
History of medical and research ethics, problem-solving in ethics, and federal and institutional requirements related to the conduct of research using human subjects or animals.

CSBL 5095 Experimental Design and Data Analysis (UTHSCSA)
2.0 Semester Credit Hours
Prerequisite: Graduate standing
The purpose of the course is to provide an introduction to experimental design and statistical analysis. The emphasis of the course will be on the selection and application of proper tests of statistical significance. Practical experience will be provided in the use of both parametric and non-parametric methods of statistical evaluation. Among the topics to be covered are: data reduction, types of distributions, hypothesis testing, scales of measurement, chi square analysis, the special case of the comparison of two groups, analysis of variance, a posteriori multiple range tests, tests of the assumptions of parametric analyses, advanced forms of the analysis of variance, linear regression and correlation analysis.
CSBL 5013  Gross Human Anatomy (UTHSCSA)
6.0 Semester Credit Hours
Prerequisite: Graduate standing
Dissection and regional study of human gross anatomy with emphasis on anthrology, osteology, gross neuromuscular and vascular anatomy, regional and general relationships between structures, and applied anatomy relevant to the practice of occupational therapy. Human materials fee: $300.

Introduction to Clinical Practices
1.0 Semester Credit Hour
Prerequisite: Graduate standing
Various diseases and pathologies will be introduced from a clinical perspective. Students will have the opportunity to attend patient rounds with physicians in clinics. Areas covered may include orthopaedics, cardiology, dentistry, physical therapy, and imaging.

Laboratory Rotations
1.0 Semester Credit Hour
Prerequisite: Graduate standing
A minimum of four rotations of six weeks each through different laboratories in the program is required prior to the student identifying her/his supervising professor. Participation in ongoing research projects in each laboratory and a written report for each rotation is required.

PHYL 5013  Physiology (UTHSCSA)
6.5 Semester Credit Hours
Prerequisite: Graduate standing
Lecture instruction in the basic concepts of cell and organ function and in the integrated function of mammalian organ systems is presented. The physiology of the nervous system is included.

Seminar
1.0 Semester Credit Hour
Prerequisite: Graduate standing
Attendance and participation in the regularly scheduled program seminar series is required.

EGR 5093  Special Topics in Engineering Analysis (UTSA*)

Supervised Teaching
3.0 Semester Credit Hours
Prerequisite: Doctoral candidates and consent of the Program Director
Supervised teaching of undergraduate, graduate, medical/dental students, or clinical residents will be required for at least one semester. For example, students may be required to lecture at undergraduate courses at UTSA, or lecture to orthopaedic/dental residents about implants and materials at UTHSCSA. The exact nature of the teaching will be determined based on each student’s program of study.

Prescribed Elective Courses
A minimum of 9 prescribed elective courses are required for graduation. Students will require written consent from their supervising professor when registering for the prescribed elective courses. The prescribed elective courses for the program are:

Advanced Biomaterials
3.0 Semester Credit Hours
Prerequisites: Biomaterials and Biomechanics, or consent of instructor
An in-depth study of different biomaterials used for implants, prostheses, and tissue engineering. Topics may include polymers, ceramics and metals, their structure-function relationships, thermal and degradation properties in vivo, cellular response to modified surfaces, and useful life.

Advanced Biomechanics
3.0 Semester Credit Hours
Prerequisite: Biomechanics or consent of instructor
Stress-strain relationships, viscoelasticity, mechanical properties, and mechanical modeling of collagenous and mineralized tissues. May include bone, cartilage, ligaments, tendons, muscles, and cardiovascular tissue. Both linear and nonlinear behavior will be addressed.

RESD 6102  Advanced Dental Materials (UTHSCSA)
1.0 Semester Credit Hour
Prerequisite: Consent of instructor
A didactic introduction to dental materials by classification, this course describes the manipulative and technical aspects of each existing material category and relates the basic physical, mechanical, and chemical properties to the desired end use so that intelligent choices may be made as new materials become available.

ME 5613  Advanced Fluid Mechanics (UTSA)
CHE 5163  Advanced Instrumental Analysis (UTSA)
EE 6343  Advanced Topics in Control Systems (UTSA)
CHE 6173  Advanced Topics in Organic, Medicinal, Bio-organic, and Biophysical Chemistry (UTSA)
EE 6363  Advanced Topics in Signal Processing (UTSA)
STA 5103  Applied Statistical Methods (UTSA)
EE 5463  Artificial Neural Networks (UTSA)
INTD 5005  Biochemistry (UTHSCSA)
4.0 Semester Credit Hours
Prerequisite: Consent of instructor
Topics to include: protein structure; properties of enzymes; structure, biosynthesis and function of lipids; pathways and regulation of carbohydrate metabolism and biosynthesis and regulation of amino acids.

PHYL 5040  Cell and Neural Physiology (UTHSCSA)
3.0 Semester Credit Hours
Prerequisite: Consent of instructor
This course focuses on molecular and biophysical mechanisms that regulate the physiological activities of eukaryotic cells. Particular emphasis is placed on events that regulate the function of groups of cells (tissues, organs) within multicellular organisms. Attention is also given to the experimental methods developed to understand

See UTSA Catalog for UTSA course descriptions.
important biological processes at the molecular and cellular level of biological organization.

Cellular Biomechanics
3.0 Semester Credit Hours
Prerequisites: Biomaterials, Biomechanics, and ME 5563, or consent of instructor
Techniques for modeling the mechanical behavior of the cytoskeleton will be discussed. Theories of elasticity, viscoelasticity, and the bi-phasic theory as applicable to cellular mechanics will be introduced. Cellular mechanical response under both shear and compressive forces will be addressed.

ME 5653 Computational Fluid Dynamics (UTSA)
BIO 7573 Computational Neuroscience (UTSA)
MICR 5016 Concepts and Techniques in Biotechnology (UTHSCSA)
Credit to be arranged
Prerequisite: Consent of instructor
Project approach to understanding and using molecular biology and modern biotechnology for the study of contemporary biology.

EE 5363 Digital Image Processing (UTSA)
ME 5563 Elasticity (UTSA)
EGR 5513 Finite Element Methods in Mechanics (UTSA)
ME 5543 Foundations of Solid Mechanics (UTSA)
RADI 6017 Human Behavioral Imaging (UTHSCSA)
3.0 Semester Credit Hours
Prerequisite: Consent of instructor
This course covers the use of noninvasive brain imaging techniques to study functional organization of the human brain.

Implants in Dentistry
3.0 Semester Credit Hours
Prerequisites: Biomaterials, Biomechanics, and consent of instructor
Biomaterials, biomechanics, design, biocompatibility, and clinical use of implants in dentistry will be emphasized. The more frequently-used implants and recent developments in implant dentistry are included.

Independent Study
3.0 Semester Credit Hours
Prerequisite: Consent of instructor
Topics will be chosen in consultation with the instructor. Areas may include biomaterials, biomechanics, imaging in orthopaedics, in dentistry, or of the nervous system.

MICR 5051 Introduction to Immunology (UTHSCSA)
2.0 Semester Credit Hours
Prerequisite: Consent of instructor. Courses in General Biology and Genetics recommended.
Study of immune responses with emphasis on experimental strategies for elucidating cellular and molecular mechanisms. Three phases of study: (1) immunochemistry and molecular biology of antibodies, lymphocyte receptors, and products of the major histocompatibility complex; (2) cellular interactions and immuno-regulation; and (3) immunopathologies (hypersensitivity, autoimmunity, immunodeficiency, transplantation rejection, and tumor immunology).

RADI 6019 Medical Image Processing (UTHSCSA)
3.0 Semester Credit Hours
Prerequisite: RADI 6016
Introduction to the basic principles of image processing as applied to digital radiography, computed tomography, ultrasound imaging and magnetic resonance images.

BIO 5023 Molecular and Genetic Bases of Living Systems (UTSA)
INTD 5006 Molecular Biology (UTHSCSA)
4.0 Semester Credit Hours
Prerequisite: Consent of instructor
A study of the molecular aspects of prokaryotic and eukaryotic genome structure and expression. Lectures will examine the current understanding of gene organization, regulation of transcription, RNA structure and function, translation and replication, and eukaryotic cells, their structure and function, methods of syntheses and regulation at the genetic and protein levels. Lectures only.

Neural Control of Movement
3.0 Semester Credit Hours
Prerequisite: Consent of instructor
This course covers physiology of movement control with an emphasis on theory (equilibrium point hypothesis, forward and inverse internal models, etc.) and application to robotics.

BIO 5433 Neurophysiology (UTSA)
INTD 5041 Neuroscience – Medical (UTHSCSA)
5.0 Semester Credit Hours
Prerequisite: Consent of instructor
Lectures, conferences, and laboratories deal with study of the anatomy and function of the brain and spinal cord. The course will include presentations of neurological cases and will be taught by an interdisciplinary task force from the Departments of Cellular & Structural Biology, Physiology, Medicine, and Surgery.

ME 5173 Nonlinear Systems and Chaos (UTSA)
RADI 6014 Physics of Dental Imaging (UTHSCSA)
2.0 Semester Credit Hours
Prerequisite: Consent of instructor
A survey of imaging procedures used in modern dentistry with an emphasis on the clinical objectives and physical principles underlying intraoral, panoramic, cephalometric, and digital dental-radiography.

RADI 5015 Physics of Diagnostic Imaging I (UTHSCSA)
3.0 Semester Credit Hours
Prerequisite: Consent of instructor
Introduction to the basic principles and radiological practices using non-invasive imaging systems. Topics include production of x-rays; interaction of radiation with matter; and the physics of imaging using computed tomography, ultrasound, and magnetic resonance.

RADI 6016 Physics of Diagnostic Imaging II (UTHSCSA)
3.0 Semester Credit Hours
Prerequisite: Consent of instructor
Theory of applications of various forms of electronic imaging systems including ultrasound and magnetic resonance imaging; advanced diagnostic imaging principles involving mathematical image analysis, digital image processing, digital image display, and concepts of electronic imaging.

**PHAR 5013  Principles of Pharmacology (UTHSCSA)**

3.0 Semester Credit Hours

Prerequisite: Organic chemistry or consent of instructor

Principles of drug action; receptor classification and quantification; dose-response relationships; cellular mechanisms of drug action; fundamental concepts of drug-receptor interactions; voltage-gated and ligand-gated ion channels; drug actions mediated by transduction and non-transduction enzymes; time course of drug action; absorption, distribution, bio-transformation and elimination of drugs; pharmacokinetics; experimental approaches to drug action.

**BIO 5503  Sensory Physiology (UTSA)**

Synaptic Plasticity and Memory

3.0 Semester Credit Hours

Prerequisite: Consent of instructor

Biological mechanisms of learning in neuronal networks with an emphasis on the cellular mechanisms of memory and the architecture of neuronal networks in which memory is embedded. Implications for machine learning will be explored.

**Tissue Engineering**

3.0 Semester Credit Hours

Prerequisite: Graduate standing

Basic principles of tissue engineering will be introduced. The three main approaches consisting of i) use of host cells capable of differentiating into tissues; ii) the development of bioactive factors to induce cells to differentiate into tissues, and iii) the development of delivery scaffolds for the host cells and/or bioactive factors will be introduced.

**Free Elective Courses**

Free elective courses are selected from any graduate course offered at UTHSCSA or UTSA. A minimum of 9 free elective courses are required for graduation. Students will require written consent from their supervising professor when registering for the free elective courses.

**Dissertation Hours**

A minimum of 12 dissertation hours are required for graduation. Students will require written consent from their supervising professor when registering for dissertation hours.

**Dissertation**

Credit to be arranged

Prerequisite: Admission to candidacy for Doctor of Philosophy degree in Biomedical Engineering, and consent of supervising professor and program director

Registration of at least two semesters is required of Ph.D. candidates.
The graduate program in Cellular and Structural Biology provides a rewarding opportunity for students wishing to pursue either the M.S. or Ph.D. for preparation for a fulfilling career in biomedicine. The strength of our program is its diversity; faculty are performing state-of-the-art research in areas of cell and molecular biology, cancer biology, human and molecular genetics, anatomical sciences, reproductive biology, immunology, developmental biology, neurobiology, and the molecular basis of aging. The curriculum and research experience is aimed at producing trainees with the technical competence and scholarly background to become independent investigators, capable of designing and executing programs of excellence in research and teaching in an academic or industrial environment.

All graduate students pursue a program of study designed to develop both their scholarly and laboratory aptitudes through one-on-one mentoring by more than 40 members of the graduate faculty. In addition, in-depth instruction is also provided on effective seminar presentation as well as grant and manuscript preparation. Graduates from the program have been successful in obtaining rewarding research or teaching positions in either academic or industrial settings; however, some have chosen alternative opportunities, such as patent law, medical school, or dental school.

The majority of students in the Cellular and Structural Biology graduate program are seeking the Ph.D. degree. The doctoral program combines course work, seminars, journal clubs, and mentored research experiences. The Ph.D. degree is awarded when the candidate has demonstrated the ability to conduct original and independent research and is knowledgeable in the applicable areas of cell and molecular biology. Also offered are two Master’s degree programs; one in the anatomical sciences and the other in biotechnology in which both research and academic skills are emphasized. For students in either Master’s track, an independent thesis and 30 hours of course work are required. There is considerable flexibility in the program in order to accommodate the needs and interests of the individual students.

Research Activities
The department has strong financial support for its basic research projects and has been consistently ranked among the top cell biology programs for funding from the National Institutes of Health. Additional research support has been derived from grants from the American Cancer Society, Veterans Administration, Howard Hughes Medical Institute, Genentech Inc., and other sources. Most Ph.D. students are supported by graduate stipends. All students are encouraged to apply for fellowships and grants and several have been successful in obtaining external funding.

A strength of the graduate program in Cellular and Molecular Biology is its diversity. Research areas include cell biology and cell signaling, developmental biology, cancer biology, aging, molecular immunology, human genetics, animal models, reproductive biology, endocrinology, neurobiology, and the anatomical sciences. State-of-the-art laboratories are equipped for biochemical, cellular, and recombinant DNA research. In addition, there are core facilities for the generation of transgenic mice, tissue culture, optical microscopy and imaging, and quantitative morphological analysis which benefit all students and faculty in the program.

The graduate faculty members collaborate extensively with individuals from the clinical departments in the dental, medical, and nursing schools; such interactions are particularly important in facilitating human-oriented research programs. Students have the opportunity to gain teaching experience by assisting with courses offered by the department to graduate, medical, allied health, and dental school students.

Requirements for Admission
Completed applications, including scores on the Graduate Record Examination General (Aptitude) Test; certified transcripts of all college work; a letter from the applicant stating her/his objectives in graduate study; and three letters of recommendation must be received before February 1 in order for the applicant to be considered for admission the following August. Individuals who will enter in January must have complete application files by September 1 (January admission is not generally recommended and should be discussed with the Chair of the Admissions Committee prior to applying). Early application is strongly recommended.

A GPA score of 3.0 and a combined score (verbal + quantitative) on the GRE Aptitude Test of 1100 are preferred. Applicants must have a bachelor’s degree or an equivalent degree and credit for the following courses:

- Biology: Two years as required for science majors
- Chemistry: One year of general inorganic and a course in organic chemistry
- Physics: One year as required for science majors
- Mathematics: At least one semester of calculus

In unusual cases, students who do not meet all of the above requirements may be considered for admission.

Curriculum for MS Candidates
The graduate program in Cellular and Structural Biology offers a Master’s Degree in Biomedical Sciences which may follow one of two basic tracks, focusing either on biotechnology or on anatomy. Generally, the biotechnology track is designed for the student who is interested in technical and/or supervisory positions in biotechnology companies, forensic labs, or in academic positions that require extensive knowledge of molecular biology. By
comparison, the anatomy track is geared towards an individual interested in teaching anatomical sciences; both research and educational skills are emphasized. For students in both Master’s tracks, an independent thesis and 30 hours of coursework are required. There is considerable flexibility in the program in order to accommodate the interests and needs of individual students.

**Curriculum for Ph.D. Candidates**

The majority of students in the Cellular and Structural Biology graduate program are seeking the Ph.D. degree. The program combines coursework, seminars, journal clubs, and mentored research experiences. The student is admitted to candidacy after completing required coursework, passing an oral qualifying exam, and demonstrating proficiency in independent laboratory research. The qualifying examination is based on a grant proposal written by the student and covers general scientific knowledge as well. The Ph.D. degree is awarded when the candidate has demonstrated an ability to conduct original and independent research and is knowledgeable in the general areas of cell biology and her/his specialization.

The Ph.D. typically requires 4–6 years of training. In the first year of study, Ph.D. students participate in a core curriculum with students from other programs at The University of Texas Health Science Center at San Antonio. The core curriculum includes three basic courses in biochemistry, molecular biology, and cell biology. In addition, first-year students in our program are required to take Colloquium, a course designed to familiarize them with reading and presenting scientific literature. In the second year, all students take a statistics course, Experimental Design and Data Analysis. Additional required and elective courses are taken to augment research training; there are several specialized courses from which to choose, including seminar and didactic courses in the areas of aging, cancer biology, genetics, anatomy, developmental biology, animal models, and neurobiology. In addition, Ph.D. students are expected to teach one semester in one of the professional or graduate courses offered by the department. The overall program is designed to produce a diversely educated and talented scientist who will be able to choose among career opportunities in industry, education, or other arenas.

**Financial Support of Graduate Students**

Currently, students pursuing Ph.D. degrees in the Cellular and Structural Biology Graduate Program are supported by training grants from the National Institutes of Health, research grants of faculty, and state stipends. Beginning with the 2002 academic year, the stipends will be $20,000 per year.

**Postgraduate Positions of Program Graduates**

Graduates have successfully competed for postdoctoral fellowships at prestigious institutions and for positions in top-notch biotech companies, including the National Institutes of Health, Abbott Laboratories, Burroughs-Wellcome, Upjohn, and world-class universities. Some graduates have chosen alternative opportunities, such as patent law, teaching, or medical/dental school.

**Required Courses for the Ph.D. Degree**

- **Core Course I: Biochemistry**
  - INTD 5005 4.0 Semester Credit Hours
  - A survey of biochemistry designed for graduate students, covering such areas as protein structure, enzymology, the metabolism and chemistry of carbohydrates, lipids, amino acids and nucleotides as well as the synthesis and function of macromolecules.

- **Core Course II: Molecular Biology**
  - INTD 5006 4.0 Semester Credit Hours
  - A study of the molecular aspects of prokaryotic and eukaryotic genome structure and expression. Lectures will examine the current understanding of gene organization, regulation of transcription, RNA structure and function, translation and replication.

- **Core Course III: Cellular Biology**
  - INTD 5007 4.0 Semester Credit Hours
  - This course offers students the opportunity to gain the fundamentals of molecular cell biology necessary to read, understand and evaluate the current research on each of the topics covered. The topics include: plasma membrane, intracellular sorting, nucleus-chromatin, energy conversion, cytoskeleton movements, cell signaling, cell growth and division, cell adhesion and extracellular matrix meiosis, germ cells/fertilization and social behavior of cells.

- **Core Course IV: Methods in Cell Biology**
  - INTD 6002 0.5 Semester Credit Hour
  - This course will deal with topics relevant to ethics in scientific research. The course will be taught on a “case study” basis, dealing with real and hypothetical situations relevant to the conduct of scientific research. Topics discussed will include, but will not be limited to: data management, peer review, recognizing scientific misconduct, authorship, and The University of Texas regulations relevant to human and animal research.
Prerequisite: Admission to candidacy for Doctor of Philosophy degree
Credit to be arranged

one term is required of M.S. candidates.
Instruction in the preparation of the thesis. Registration for at least
Prerequisite: Admission to candidacy for Master of Science degree
Credit to be arranged

CSBL 6098 Thesis
advisor.
Independent, original research under the direction of a faculty
during all subsequent spring semesters students are required to
oraly defend a mock postdoctoral proposal (qualifying exam).
During the second fall semester students must write and
literature review on a topic of their choice and a research grant
During the first spring semester students are required to write a

Attendance and participation in the regularly scheduled Depart-
ment seminar series is required during each fall and spring semester.
During the first spring semester students are required to write a literature review on a topic of their choice and a research grant proposal. During the second fall semester students must write and orally defend a mock postdoctoral proposal (qualifying exam). During all subsequent spring semesters students are required to present a seminar covering their progress in research.

CSBL 6097 Research
Credit to be arranged
Independent, original research under the direction of a faculty advisor.

CSBL 6098 Thesis
Credit to be arranged
Prerequisite: Admission to candidacy for Master of Science degree
Instruction in the preparation of the thesis. Registration for at least one term is required of M.S. candidates.

CSBL 7099 Dissertation
Credit to be arranged
Prerequisite: Admission to candidacy for Doctor of Philosophy degree
Registration for at least two terms is required of Ph.D. candidates.

Electives

CSBL 6048 Biology of Aging
3.0 Semester Credit Hours
The purpose of this course is to provide students with the most up-to-date information on the current understanding of the aging process. This advanced interdisciplinary graduate course will be offered to students who wish to either specialize in or have a strong background in the interrelated areas of aging and age-related diseases. Faculty from the Departments of Cellular & Structural Biology, Physiology, Pharmacology and Medicine will be involved in teaching this course, which will cover the molecular and cellular biology of aging, model systems used for aging studies, age-related changes in organs and tissues and age-related diseases. This course is an elective for all three Departments.

CSBL 6020 Concepts in Vertebrate Development
3.0 Semester Credit Hours
This course will employ classical experimental embryology as a background for presenting recent advances in molecular and cellular aspects of vertebrate development. Topics include: gametogenesis and fertilization, cleavage and midblastula transition, gastrulation, neural induction, neural crest migration, CNS patterning, limb development, and inductive events in endodermal differentiation. Emphasis will be placed on mechanisms of morphogenesis and differentiation at the molecular level.

CSBL 6064 Genetics
3.0 Semester Credit Hours
This course is designed to provide an overview of genetic research. Topics to be covered include: cytogenetics, somatic cell genetics, linkage analysis, genomics, evolutionary genetics, comparative genetics, and the use of animal models for studying human genetic diseases.

CSBL 6068 Molecular Oncology
3.0 Semester Credit Hours
This course will provide an overview of current areas of research in the molecular biology of tumor formation. Areas that will be covered include oncogenes, tumor suppressor genes, telomere biology, DNA repair pathways and maintenance of genomic stability. The alteration of normal cellular pathways in the multistep process of tumorigenesis will be discussed, as well as modes of action of chemotherapeutic agents and current strategies in gene therapy of cancer.

CSBL 6021 Animal Models
3.0 Semester Credit Hours
The relevant biology, applicability and practical use of a number of animal models to biomedical research is covered. Invertebrate (e.g., C. elegans) and vertebrate (e.g., fish and rodents) model systems are included in the course. Strengths and weaknesses of each organism that render them particularly valuable as animal models are emphasized. Experimental approaches and tools that are utilized in conjunction with each animal model are rigorously examined. The course is taught from primary scientific literature using classic historical publications and recent publications.

INTD 5043 Fundamentals of Neuroscience
4.0 Semester Credit Hours
This course is intended to introduce students to a broad survey of the basics of neuroscience. The course is organized into a series of modules discussing levels of neurobiological functions that range from molecular through behavioral and cognitive processes, and covering topics such as action potential, molecular mechanisms of
synaptic release, neurotransmitters systems, autonomic regulation, the limbic system, sensory and motor processing, motion, cognition, and neuropsychiatric disorders.

CSBL 5019  Gross Human Anatomy for Graduate Students
6.0 Semester Credit Hours
This course will teach structural and functional anatomy of the normal human body. Lectures will serve as introductory information for the laboratory dissections to follow and to clarify the interactions of the various anatomical components to accomplish the function of the body. The course will cover the central and peripheral nervous systems, vertebral column and back, head and neck, body wall, thorax, abdomen, pelvis and perineum, and the upper and lower limbs. Special emphasis will be placed on the laboratory experience in which the learner will perform a detailed dissection of the entire human body in order to achieve an understanding of the three-dimensional relationships and thus the interactive function of the body. These dissections will be supplemented by the study of prosected specimens, models skeletons, and other demonstration materials. Human materials fee: $300.

CSBL 5011  Gross Anatomy and Human Embryology
7.5 Semester Credit Hours
Lectures, conferences and laboratory work covering normal human developmental and gross anatomy. Lectures on early embryonic development and implantation are presented at the beginning of the course. Lectures and laboratories on the development of the systems are correlated with the presentation and dissection of the gross structure of the adult. Groups of four students dissect a cadaver under supervision of the Cellular & Structural Biology Staff. Prosections, demonstration specimens, x-rays, films and other learning aids supplement the laboratory work. Applied anatomy and malformations are discussed by clinical specialists. Human materials fee: $300.

CSBL 5016  Gross, Head and Neck Anatomy
7.5 Semester Credit Hours
The structure of the human body, with emphasis on the functional anatomy of the trunk, neck, head, and nervous system, is the focus of this course. Regional dissection of a human cadaver, by groups of students, is supplemented by individual study of prosections, models, skeletons, and other demonstration materials and is guided by lectures, conferences and films. The first part of the course, which deals with the anatomy of the thorax and abdomen, presents a general overview of the functional architecture of most major body systems. The emphasis is on principles of structure, to allow development of a holistic understanding of human biology, both normal and pathological. The latter half of the course is devoted to study of the head and neck; greater emphasis will be placed on anatomical relationships with obvious reference to clinical dentistry. Human materials fee: $300.

CSBL 5031  Microscopic Anatomy - Medical
5.0 Semester Credit Hours
This course consists of a series of lectures and laboratory sessions which cover current concepts in cell biology and human histology. Basic information on the structure and function of cells and tissues is presented in the lectures; this is followed by staff-supervised laboratory sessions emphasizing the recognition of cells and the fundamental tissues. Each student is provided with a box of microscopic slides of human tissues. The laboratory sessions are accompanied by microscopic slide demonstrations and/or television tapes of tissues under study. Supplemental study material such as films, television tapes and transparent photomicrographics are available upon request through the Audiovisual Department and the Learning Resources Center. The general purpose of this course is to offer the student the opportunity to become acquainted with basic cytology and histology of normal human tissues, thereby developing a firm foundation of knowledge for the understanding of normal and disease processes. Laboratory and microscope fees will apply.

CSBL 5032  Dental Histology
5.0 Semester Credit Hours
Lectures, conferences, demonstrations and laboratory work studying the microscopic structure of the tissues and organs of the human body. Lectures will emphasize the correlation of structure and function while laboratory work will be devoted to the recognition of normal human tissue. This course may be taken in lieu of CSBL 5031 only under unusual circumstances. Laboratory and microscope fees will apply.

INTD 5041  Neuroscience - Medical
5.0 Semester Credit Hours
Lectures, conferences, and laboratories deal with study of the anatomy and function of the brain and spinal cord. The course will include presentations of neurological cases and will be taught by an interdisciplinary task force from the Departments of Cellular & Structural Biology, Physiology, Medicine and Surgery. Laboratory and microscope fees will apply.
The Master of Science Degree Program in Clinical Investigation (MSCI) trains clinicians in the conduct of clinical investigations. Applicants to the Clinical Investigation program must provide proof of a degree in Medicine, Dentistry, Graduate Nursing, Allied Health Science, or evidence of concurrent enrollment in the Graduate School of Biomedical Sciences. A GRE score is not required. Enrollees in the MSCI Program will complete a mentored research project over two years while participating in a highly integrated set of six didactic courses leading to the MSCI degree. The proposed courses are:

- Responsible Conduct of Patient-Oriented Clinical Research
- Research Methodology (3 semesters)
- Biostatistics (3 semesters)
- Integration of Molecular Biology with Clinical Research (1 semester)
- Data Management, Quality Control, and Regulatory Issues
- Scientific Writing

Students will have the opportunity to become expert in the design and conduct of outstanding multidisciplinary patient-oriented research studies involving direct interaction with human subjects in culturally diverse settings.

MEDI 5070  Responsible Conduct of Patient-Oriented Clinical Research

2.0 Semester Credit Hours

This interdisciplinary course is designed to train participants in the responsible conduct of patient-oriented clinical research. Students will have the opportunity to learn to and, by the end of the course, be required to: (1) delineate a history of hallmark abuses of humans enrolled in clinical research, (2) describe the evolution of national and international codes and regulations guiding inclusion of human subjects in clinical investigations, (3) list the elements of informed consent and describe procedures and precautions for enrolling special populations into clinical investigation, (4) write a consent form in understandable language, (5) recognize different forms of scientific misconduct, (6) describe the role and processes of a peer review board to judge violations in research ethics, (7) develop strategies for self-assessment and validation of scientific objectivity in one’s own research, and (8) recognize the ethical responsibilities and consequences of whistle blowing.

MEDI 5074  Data Management, Quality Control, and Regulatory Issues

2.0 Semester Credit Hours

This interdisciplinary course is designed to train participants in the necessary data management and quality control required for the conduct of patient-oriented clinical research. Students will have the opportunity to learn to and, by the end of the course, be required to: (1) develop a data management plan integrated with computer technology for a research project; (2) develop a manual of operations to document coding decisions, quality control methodology, and personnel training for a research project; (3) describe the steps of preparation for a site visit, data audit, or review by quality control committees to comply with institutional, state, and federal regulations; (4) implement a pilot project simulating actual study and data management techniques, and modify the study protocol when appropriate; and (5) develop a budget for a research project.

MEDI 6060  Patient-Oriented Clinical Research Methods - 2

2.0 Semester Credit Hours

This interdisciplinary course is the second in a three-semester sequence designed to train participants in the conduct of patient-oriented clinical research. Students will have the opportunity to learn to and, by the end of the course, be required to: (1) define and summarize different categories of data; (2) set up and perform tests of hypotheses; (3) estimate sample sizes for survey and case-control studies; and (4) use statistical software packages to enter, summarize, graph, visualize, and analyze data.

MEDI 6060  Patient-Oriented Clinical Research Methods - 2

Prerequisite: Patient-Oriented Clinical Research Methods - 1

This interdisciplinary course is the second in a three-semester sequence designed to train participants in the conduct of patient-oriented clinical research. Students will have the opportunity to learn to and, by the end of the course, be required to: (1) define and summarize different categories of data; (2) set up and perform tests of hypotheses; (3) estimate sample sizes for survey and case-control studies; and (4) use statistical software packages to enter, summarize, graph, visualize, and analyze data.
criteria for inferring causation from observational studies; (2) design strategies for subject retention in a prospective study; (3) design strategies for monitoring progress in a randomized control trial; (4) delineate strategies for minimizing bias in cohort studies and randomized control trials; (5) compare and contrast the uses, strengths, and weaknesses of different clinical trial designs; (6) read and interpret research reports of cohort studies and randomized control trials; and (7) describe the steps in conducting a meta-analysis.

MEDI 6061 Patient-Oriented Clinical Research Biostatistics - 2
2.0 Semester Credit Hours
Prerequisite: Patient-Oriented Clinical Research Biostatistics - 1
This interdisciplinary course is the second in a three-semester sequence designed to train participants in the analysis and biostatistics of patient-oriented clinical research. Students will have the opportunity to learn to and, by the end of the course, be required to: (1) perform a two-way Analysis of Variance and explain the results; (2) prepare a life table and graph the results; (3) compare and contrast the purpose and characteristics of different forms of interventional trials; and (4) plan the sample size, analysis, and stopping rules of a randomized clinical trial.

MEDI 6062 Patient-Oriented Clinical Research Methods - 3
1.0 Semester Credit Hour
Prerequisite: Patient-Oriented Clinical Research Methods - 1 & 2
This interdisciplinary course is the third in a three-semester sequence designed to train participants in the conduct of patient-oriented clinical research. Students will have the opportunity to learn to and, by the end of the course, be required to: (1) design and conduct a study to determine the validity and reliability of a research instrument; (2) design and conduct a study to cross-culturally adapt a research instrument; (3) compare and contrast the uses, strengths, and weaknesses of genetic epidemiology study designs; (4) describe the strengths and weaknesses of secondary data analysis; (5) interpret the quality of nested case-control and cohort studies; and (6) delineate the uses and methods applied in pharmaco-epidemiology investigations.

MEDI 6063 Patient-Oriented Clinical Research Biostatistics - 3
1.0 Semester Credit Hour
Prerequisite: Patient-Oriented Clinical Research Biostatistics - 1 & 2
This interdisciplinary course is the third in a three-semester sequence designed to train participants in the analysis and biostatistics of patient-oriented clinical research. Students will have the opportunity to learn to and, by the end of the course, be required to: (1) conduct an analysis of a survey instrument to identify poor items and compute a summary scale; (2) plan an analysis to demonstrate cross-cultural adaptation of a research instrument; (3) compare and contrast analytic methods required for family-based studies with traditional epidemiologic designs; (4) perform a simple cancer-risk analysis using concepts and analytic methods for screening and disease detection; and (5) analyze a sample data set using graphical methods for non-linear behaviors and interactions.

MEDI 6097 Research
3.0 Semester Credit Hours
The Research Course is set up for the student to conduct their Mentored Research Project with their faculty advisor. This time is to be spent directly working on the project and includes, but is not limited to, writing consent forms, collecting data, analyzing data, and preparing papers and/or a thesis. Students will take three semester credit hours of research during each semester of the Master of Science in Clinical Investigation Degree Program.

INTD 5043 Fundamentals of Neuroscience
4.0 Semester Credit Hours
This course is intended to introduce students to a broad survey of the basics of neuroscience. The course is organized into a series of modules discussing levels of neurobiological functions that range from molecular through behavioral and cognitive processes, and covering topics such as action potential, molecular mechanisms of synaptic release, neurotransmitter systems, autonomic regulation, the limbic system, sensory and motor processing, motion, cognition, and neuropsychiatric disorders.
MICROBIOLOGY & IMMUNOLOGY

The graduate program in Microbiology & Immunology provides many opportunities for students seeking the Ph.D. degree. Faculty-sponsored research includes studies in immunobiology, microbial physiology and genetics, molecular and cell biology, viral biochemistry and biology, mechanisms of microbial and parasitic disease pathogenesis, and host-parasite interactions.

The objective of the program is to prepare the student for a rewarding career as an independent researcher and teacher. The program is designed to provide students with the opportunity to acquire an in-depth knowledge of problem-solving skills, including methods of communicating scientific data and methods of using advanced research technology. An interdisciplinary approach to problem solving exists which involves experimental technologies from several areas in addition to microbiology. Students also have the opportunity to acquire basic teaching skills through required participation in departmental courses offered in the medical, dental, and graduate curricula; in departmental seminars; and in journal club meetings.

Several courses are required of every student so that a broad background in microbiology may be developed. However, the program is flexible in meeting the specific needs of individual students in order to give them the opportunity to satisfy their intellectual interests and career goals. Students who successfully complete all requirements for the degree of Doctor of Philosophy in Microbiology & Immunology will have the opportunity to develop the background required to initiate a successful and rewarding career in academic and research pursuits at universities or health science centers, in industrial research, or in government research institutes.

Evening course

The Department of Microbiology & Immunology offers a Master of Science degree program that targets elementary and secondary school teachers. The program is designed so that students can complete their degrees within 21 months by taking evening courses and doing their research thesis in the summer. The Evening M.S. program accepts students every other year. The next class will impact children. Program projects and demonstrations will be designed for teachers to take to the classroom. The requirements for admission are somewhat different than for the Ph.D. program, and can be obtained directly from the department. Policies and guidelines outlined in this UTHSCSA Catalog apply to students enrolled in the evening program.

Research Activities

Research activities conducted by the departmental investigators staff represent many aspects of microbiology and immunology. These include molecular and cellular biology and genetics of procaryotes and eucaryotes, microbial physiology and metabolism, basic mechanisms by which infectious agents produce disease, host factors which contribute to disease and recovery, effects of various antimicrobial and antiviral agents on host-parasite relations, characterization of surface immunogens of cells and microorganisms, immunological responses of the host to microorganisms, development of serodiagnostic probes for detection of diseases, the cellular basis of immune response, and how the immune system is regulated. There are also several extensive investigations designed to make significant contributions to recently intensified efforts concerned with biodefense.

The department has all the major equipment needed for conducting modern research. Varieties of immunological methods are used to identify cells (including the use of the fluorescence-activated cell sorter) and cell products involved in humoral and cell-mediated immune reactions. Radioimmunoassay and enzyme-linked antibody techniques are used in the detection of extremely small amounts of specific antibody or antigens. Hybridoma technology is used to produce specific monoclonal antibodies and genetic engineering techniques such as oligonucleotide mutagenesis, polymerase chain reaction and gene disruption are employed to isolate the study of individual genes and their expression. Radioisotope methods are used in conjunction with chromatographic, electrophoretic, and radioimaging techniques to effect the separation and identification of many kinds of molecules.

Faculty in the Department of Microbiology & Immunology receive research support from a variety of grants and contracts from federal and private agencies.

Requirements for Admission

Students normally begin graduate studies during the fall semester. Completed applications for the Ph.D. program, including scores on the Graduate Record Examination General (Aptitude) Test, should be received before February 1 in order for the applicant to be considered for admission into the program. Applicants with undergraduate grade point average and GRE scores below the stated minimum of the Graduate School of Biomedical Sciences will be evaluated. Students are accepted for admission on a competitive basis and only a limited number of positions are available each year.

Candidates for admission to the Microbiology Ph.D. program should possess a broad general education, including a B.S. or B.A. degree in science. A minimum of 12 semester hours in advanced biology courses (microbiology, immunology, biochemistry or genetics) is a prerequisite to admission to the program. Satisfactory completion of the following undergraduate courses is also a prerequisite,
although applicants who lack one of the following requirements may be accepted contingent upon satisfactory completion of this requirement:

**Chemistry:** Two years. One year of general chemistry and one year of organic chemistry; a course in biochemistry is strongly recommended.

**Physics:** One year of general physics

**Mathematics:** A minimum of one semester of calculus

Past academic performance should be of sufficiently high quality to warrant further progress in scholarly activity. An average of B or better in all science courses is needed for the applicant to be highly competitive. Potential for future academic and career success as well as leadership will be considered.

**Financial Support for Graduate Students**

Teaching and graduate assistantships are awarded annually to Ph.D. students on the basis of academic qualifications. After one or two years as a Teaching Assistant, the students may be awarded an assistantship from research grants, some of which are conducted jointly with faculty of other departments.

**Postgraduate Positions of Program Graduates**

Graduates who have received Ph.D. degrees from this program have continued their professional activities. Some are in postdoctoral training; others are now in positions in research institutes, industrial or government laboratories, or academic institutions.

**Curriculum**

For the Doctor of Philosophy degree, no specific number of semester hours has been set, although admission to candidacy is contingent upon satisfactory performance on the written and oral qualifying examination. The examination, conducted during the second year of the student’s program, will involve the preparation of an original research proposal which subsequently will be defended by the student in an oral examination. This exam will focus on specific and general aspects of the proposal. The Committee on Graduate Studies will recommend the student to candidacy for the Ph.D. degree following the student’s completion of all required courses, satisfactory performance in the qualifying examination, and proficiency in independent laboratory work and research skills.

Following the student’s admission to candidacy, a carefully selected Supervising Committee, chaired by the student’s Supervising Professor, will review the student’s choice of a research problem and proposals for its solution. The student will submit periodic written and oral reports and will meet with the Supervising Committee at least twice a year to review progress on the dissertation research problem. Following her/his completion of the dissertation and certification by the Supervising Committee of the suitability of the dissertation for the final examination, the candidate will present a public seminar and defense of the dissertation and will continue its defense in session with the Supervising Committee.

The awarding of the Ph.D. degree is based on evidence of the candidate’s ability to conduct independent and original research, as judged by the Committee on Graduate Studies and by the Supervising Committee for each student, as well as her/his knowledge and skills in the general area of microbiology and in a selected field of specialization within microbiology.

For the Master of Science degree, a student must submit an acceptable research proposal, conduct the research, and then successfully defend a thesis in order to complete the requirements for the M.S. degree.

**Required Courses for the Ph.D. Degree**

**MICR 5090 Acquiring Presentation Skills**

1.0 Semester Credit Hour

This course is designed to prepare the student for giving a scientific lecture or seminar. Students present at least one lecture per academic year. Each student is coached and evaluated by faculty members in terms of both effective public speaking and critically analyzing scientific data. In addition, the seminars are videotaped. Students are required to attend all seminars.

**MICR 5031 Pathogenic Microbiology**

4.0 Semester Credit Hours

Prerequisite: Biochemistry and Molecular Biology

Lectures only.

This course integrates different disciplines (immunology, cell biology, genetics, biochemistry, molecular biology, physiology, and medical microbiology) with a central theme focused on molecular mechanisms of microbial pathogenesis in man.

**MICR 5041 Introduction to Virology**

2.0 Semester Credit Hours

Prerequisites: General Biology, General or Medical Microbiology, General Biochemistry and consent of instructor

Basic non-medical general virology with emphasis on molecular biology of animal viruses: physical and chemical properties, molecular mechanisms and biology of multiplication, effects on host cells, genetics, and mechanisms of persistence in nature.

**MICR 5051 Introduction to Immunology**

2.0 Semester Credit Hours

Prerequisite: Consent of instructor; courses in General Biology and Genetics recommended

Lectures only.

Study of immune responses with emphasis on experimental strategies for elucidating cellular and molecular mechanisms. Three phases of study: (1) immunochemistry and molecular biology of antibodies, lymphocyte receptors and products of the major histocompatibility complex; (2) cellular interactions and immuno-regulation; and (3) immunopathologies (hypersensitivity, autoimmunity, immunodeficiency, transplantation rejection, and tumor immunology).
INTD 5005   Core Course I: Biochemistry  
4.0 Semester Credit Hours  
Lectures only.

INTD 5006   Core Course II: Molecular Biology  
4.0 Semester Credit Hours  
Lectures only.
A study of the molecular aspects of prokaryotic and eukaryotic genome structure and expression. Lectures will examine the current understanding of chromosome structure, gene organization, regulation of transcription, RNA structure and function, translation and replication.

INTD 5007   Core Course III: Cellular Biology  
4.0 Semester Credit Hours  
Lectures only.
This course offers students the opportunity to gain the fundamentals of molecular cell biology necessary to read, understand and evaluate the current research on each of the topics covered. The topics include: plasma membrane, intracellular sorting, nucleic-chromatin, energy conversion, cytoskeleton movements, cell signaling, cell growth and division, cell adhesion and extracellular matrix meiosis, germ cells/fertilization and social behavior of cells. Topics are presented through lectures, demonstrations, text, current literature readings and student presentations.

INTD 6002   Ethics in Research  
0.5 Semester Credit Hour  
This course will deal with topics relevant to ethics in scientific research. The course will be taught on a “case study” basis, dealing with real and hypothetical situations relevant to the conduct of scientific research. Topics discussed will include, but will not be limited to: data management, peer review, recognizing scientific misconduct, authorship, and issues relevant to human and animal research.

MICR 5007   Biopolymers of Life  
3.0 Semester Credit Hours  
This course is a comparison of the macromolecules of prokaryotic and eukaryotic cells, their structure and function, methods of synthesis and regulation at the genetic and protein levels.

MICR 5008   Contributions of Microbiology to Science and Society  
3.0 Semester Credit Hours  
This course introduces the historical perspectives of microbiology from Leeuwenhoek and the microscope to the development of the modern tools of molecular biology emphasizing the benefit of microbiology to the advancement of science and society.

MICR 5020   Biodiversity within the Microbial World  
Credit to be arranged  
This course introduces the range of microbial forms with emphasis on biodiversity and ecological niches.

MICR 5022   Microbial Ecosystems  
Credit to be arranged  
This course introduces the concept of microbial communities and ecological niches in nature; examines the role of environmental control on microbial populations; bioremediation of polluted environments.

MICR 6097   Research  
Credit to be arranged  
Independent, original research under the direction of faculty advisor. May be conducted in bacteriology, virology, mycology, parasitology, and immunology.

MICR 6098   Thesis  
Credit to be arranged  
Prerequisite: Admission to candidacy for the Master of Science degree  
Registration for at least one term is required of M.S. candidates.
Electives

MICR 6043  Advanced Topics in Virology
2.0 Semester Credit Hours
Prerequisites: Introduction to Virology, General Biochemistry, and consent of instructor
Lectures only.
In-depth study of selected molecular topics from the current literature in virology.

MICR 6052  Advanced Immunobiology
2.0 Semester Credit Hours
Prerequisite: Introduction to Immunology or consent of instructor
Lectures only.
An in-depth study of the immune system and how it is regulated. Presentation and discussion of current literature in these areas.

MICR 6024  Advanced Microbial Genetics
1.0–4.0 Semester Credit Hours
Prerequisites: Microbial Genetics and consent of instructor
Lectures and conferences.
In-depth study of selected areas of microbial genetics. Presentation and discussion of current literature in these areas.

MICR 6022  Advanced Microbial Physiology
2.0 Semester Credit Hours
Prerequisite: Microbial Physiology and consent of instructor
Readings and conferences
Current concepts and experimental studies in microbial structure-function relationships and regulatory mechanisms.

MICR 5092  Special Problems in Microbiology
Credit to be arranged
Prerequisite: Consent of instructor
Course provides an opportunity for the student to engage in a special research project or to develop proficiency in the use of certain laboratory methods.

MICR 5091  Special Topics in Microbiology
Credit to be arranged
Prerequisite: Consent of instructor
Students will be given an opportunity to gain in-depth understanding of selected topics in microbiology through a combination of library research and discussion with faculty.

MICR 5011  Medical Microbiology
5.0 Semester Credit Hours
Prerequisite: Consent of instructor
Lectures only.
This course is designed primarily for medical students; graduate credit will be permitted only under unusual circumstances. Broad coverage of human immunology, virology, bacteriology, mycology and parasitology with emphasis upon problems likely to be encountered in medical practice.

MOLECULAR MEDICINE

The program in molecular medicine offers a research-oriented, interdisciplinary course of study leading to the M.S. and Ph.D. degrees. The faculty is composed of both basic and clinical scientists drawn from the Departments of Biochemistry, Molecular Medicine, Cellular and Structural Biology, Medicine, Surgery, Pathology, and Physiology. The objective of the program is to train future scholars in the use of molecular biological approaches for the investigation of fundamental biomedical questions associated with the diagnosis and treatment of human diseases. Through completion of the program, students will have the opportunity to prepare for careers as independent investigators and teachers in cellular and molecular medicine.

The research interests of the faculty cover many areas of molecular and cell biology, including the molecular genetic basis of cancer and tumorigenesis, mechanisms of cancer metastasis, animal models of disease, transcriptional regulation, development of anticancer drugs, control of mammalian development, bone cell biology in health and disease, mouse genetics, molecular biological basis of aging, DNA repair, genetic recombination, eukaryotic cell-cycle regulation, protein structure, protein degradation, and signal transduction.

The laboratories of the molecular medicine program faculty members are located in the University of Texas Institute of Biotechnology and the Institute for Drug Development in the Texas Research Park, as well as at the main campus of the Health Science Center. State-of-the-art facilities for cellular and molecular biological research and biochemistry are also available, as well as specialized instrumentation required for electron, fluorescence, confocal, and atomic force microscopy; the generation of transgenic and chimeric mice; biomolecular interaction studies; biopolymer synthesis; peptide and nucleic acid sequencing; and protein purification.

Admission Requirements

In addition to the requirements for admission to the Graduate School of Biomedical Sciences, applicants to the molecular medicine program must have received credit for the following courses:

Biology*: Two years as required for science majors
Chemistry*: One year of general inorganic and a course in organic chemistry. Analytical and physical chemistry are recommended.
Physics*: One year as required for science majors
Mathematics: A minimum of one semester of calculus

Curriculum

During the first year, students attend core courses in advanced molecular biology, molecular medicine, and

* Courses should include laboratory experience.
laboratory techniques. At the same time, they are introduced to research through a series of rotations in the laboratories of individual faculty members. At the end of the first year, students must pass an oral Comprehensive Examination covering material presented in the first-year classes. Following successful completion of the Comprehensive Examination, each student selects a faculty advisor and begins doctoral research. During their third year in the program, students must pass the Qualifying Evaluation, which consists of a written dissertation proposal followed by defense of the proposal in an oral examination. Completion of course work, the comprehensive and qualifying examinations, and doctoral research should take four to five years.

**Required Courses**
Advanced Molecular Cell Biology
Molecular Medicine
Seminars in Molecular Medicine
Modern Methods in Cell and Molecular Biology
Graduate Colloquium
Ethics in Research
Supervised Teaching
Research
Thesis
Dissertation

**Electives**
Biochemistry
Current Topic in Cancer Biology
Human Cytogenetics
Advanced Human Genetics
Molecular Developmental Biology
Introduction to Virology
Introduction to Immunology
Advanced Topics in Virology
Advanced Molecular Tumor Biology
Advanced Biochemistry of Nucleic Acids and Proteins
Biostatistics
Basic Pathology
Principles of Physiology
Advanced Pharmacology I
Independent Study

**Required Courses for the Ph.D. Degree**
MMED 6016 Advanced Molecular Cell Biology

*5.0 Semester Credit Hours*
A study of the organization and function of the genome at the molecule level. The topics include: gene structure, transcriptional control, RNA structure and processing, translation, genome replication and repair, the molecular biology of tumors, and the molecular genetics of development. This is a general course intended to introduce the student to the important molecules involved in the life processes of the cell. Their structure, function, localization and interactions will be the focus of study. The students will also be introduced to the implications that these molecular events have in human health and disease.

MMED 5001 Molecular Medicine

*3.0 Semester Credit Hours*
This course is designed to integrate the fundamental principles of molecular biology with modern medicine. The topics will include the basics of gene mapping, tactics used in the cloning of genes involved in diseases, the analysis of the structure and function of genes in relation to the characteristics of various diseases, alterations of the genome in disease states and potential strategies to exploit this knowledge in gene therapy. This course will build upon the basic knowledge presented in Advanced Molecular Biology using specific examples of current and future applications of this new knowledge.

MMED 6091 Seminars in Molecular Medicine

*1.0 Semester Credit Hour*
Registration every term in residence is required of all Molecular Medicine students.

MMED 5015 Modern Methods in Cell and Molecular Biology

*1.0 Semester Credit Hour*
A course designed to introduce students to the basic experimental techniques used in the study of cell biology, molecular biology and protein analysis. This is a hands-on laboratory course that utilizes a special student laboratory and specialized equipment.

MMED 5019 Graduate Colloquium

*1.0 Semester Credit Hour*
A course designed to provide graduate students with experience in seminar preparation and presentation with an emphasis on critical evaluation of data and delivery of material.

INTD 6002 Ethics in Research

*0.5 Semester Credit Hour*
This course will deal with topics relevant to ethics in scientific research. The course will be taught on a “case study” basis, dealing with real and hypothetical situations relevant to the conduct of scientific research. Topics discussed will include, but will not be limited to: data management, peer review, recognizing scientific misconduct, authorship, and The University of Texas regulations relevant to human and animal research.

MMED 6071 Supervised Teaching

*1.0 Semester Credit Hour*
Teaching under the close supervision of instructors in Advanced Molecular Biology and Modern Methods in Cellular and Molecular Biology as laboratory assistants, review session and tutorial leaders. Assistants may be called upon to present formal lectures.

MMED 6097 Research

Credit to be arranged
Independent, original research under the direction of faculty advisor.

MMED 6098 Thesis

Credit to be arranged
Registration for at least one term is required of M.S. candidates.

MMED 7099 Dissertation

Credit to be arranged
Registration for at least two terms is required of Ph.D. candidates.

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**The exact electives will be determined by student’s advisory committee.**
Electives

INTD 5005  Core Course I: Biochemistry
4.0 Semester Credit Hours
Topics to be covered include: protein structure, properties of enzymes; structure, biosynthesis and function of lipids; pathways and regulation of carbohydrate metabolism; and biosynthesis and regulation of amino acids, nucleotides, and related compounds.

MMED 6017  Cellular Response to DNA Damage
1.0 Semester Credit Hour
This advanced course will cover recent advancements in the molecular and cellular aspects of cellular responses to DNA damage. Topics include new insights into DNA repair mechanisms, interactions between DNA repair and tumor suppressor genes, and DNA damage-activated cell cycle checkpoints.

MMED 6030  Current Topics in Cancer Biology
2.0 Semester Credit Hours
This advanced course will cover recent advancements in molecular and cellular aspects of cancer biology. Topics to be covered include identification of cancer-related genes, new insights of gene function of previously identified cancer-related genes, and new approaches to the study of cancer.

CSBL 5066  Human Cytogenetics
2.0 Semester Credit Hours
A lecture and student seminar course concerning human cytogenetics and the organization of the human genome. Emphasis will be placed on clinical aspects and a molecular approach to the human genome. Topics will include clinical disease, cancer genetics, and gene mapping.

MICR 5041  Introduction to Virology
2.0 Semester Credit Hours
Basic nonmedical general virology with emphasis on molecular and cellular biology of animal viruses; physical and chemical properties, molecular mechanisms and biology of multiplication, effects on host cells, genetics, and interferon.

MICR 5051  Introduction to Immunology
2.0 Semester Credit Hours
Study of immune responses with emphasis on experimental strategies for elucidating cellular and molecular mechanisms. Three phases of study are (1) immunochemistry and molecular biology of antibodies, lymphocyte receptors and products of the major histocompatibility complex; (2) cellular interaction immunoregulation; and (3) immunopathologies.

MICR 6043  Advanced Topics in Virology
2.0 Semester Credit Hours
In-depth study of selected topics in virology.

CSBL 5046  Molecular Pathogenesis of Disease
1.0 Semester Credit Hour
This course is designed to illustrate the ways medical scientists investigate basic mechanisms of disease. Students will meet in seminar groups throughout the semester and will have the opportunity to develop confidence in critically evaluating literature and in devising hypotheses that exploit and consolidate the student’s understanding of cellular and molecular biology as it applies to human disease. The course will emphasize neoplasia, inflammation, genetic disorders, development disorders, and neuropathology.

PATH 5021  Biostatistics
3.0 Semester Credit Hours
(See Coordinate Graduate Courses at the end of the Graduate School section.)

PATH 2005  Basic Pathology
12.0 Semester Credit Hours
This course provides an introduction to the fundamentals of human disease (general pathology) followed by a review of the principal diseases of major organ systems (systemic pathology). Teaching methods include lectures, laboratory exercises, case conferences, reviews and a variety of self-instructional materials. The interpretation of gross and microscopic pathologic specimens is emphasized as a means of illustrating the application of principles to actual clinical diseases. The course also includes the application of clinical laboratory tests in disease diagnosis.

Physiology Electives

The following electives are described in the physiology program descriptions:

PHYL 5041  Cardiovascular Physiology
PHYL 5042  Renal and Acid Base Physiology
PHYL 5043  Respiratory Physiology
PHYL 5044  Endocrine/Metabolic Physiology
PHYL 5040  Cellular and Neural Physiology

PHAR 5013  Principles of Pharmacology
3.0 Semester Credit Hours
Principles of drug action; receptor classification and quantitation; dose-response relationships; cellular mechanisms of drug action; fundamental concepts of drug-receptor interactions; voltage-gated and ligand-gated ion channels; drug actions mediated by transduction and non-transduction enzymes; time course of drug action; absorption, distribution, biotransformation and elimination of drugs; pharmacokinetics; and experimental approaches to drug action.

INTD 5043  Fundamentals of Neuroscience
4.0 Semester Credit Hours
This course is intended to introduce students to a broad survey of the basics of neuroscience. The course is organized into a series of modules discussing levels of neurobiological functions that range from molecular through behavioral and cognitive processes, and covering topics such as action potential, molecular mechanisms of synaptic release, neurotransmitters systems, autonomic regulation, the limbic system, sensory and motor processing, motion, cognition, and neuropsychiatric disorders.
PHARM.D. PROGRAM

The Doctor of Pharmacy (Pharm.D.) program provides students the opportunity to acquire the education and training required to provide comprehensive pharmaceutical care services in a variety of practice environments. A select number of students may participate in the Pharm.D. program administered jointly by The University of Texas at Austin College of Pharmacy and The University of Texas Health Science Center at San Antonio after successfully completing two years of professional course work in Pharmacy. During the third professional year the student increases her/his knowledge and comprehension of pathophysiology, applied pharmacokinetics, pharmacoeconomics, patient assessment techniques, and pharmacotherapy. The emphasis on problem-based instruction provides students the opportunity to improve their skills in retrieving and interpreting drug and biomedical information as well as integrating and applying previously acquired knowledge to new situations. The fourth professional year consists of seven 6-week clerkships which are conducted in a variety of acute care and ambulatory care facilities throughout the region.

The Dean of the Graduate School of Biomedical Sciences is responsible for the operation of the program jointly administered by UTHSCSA and The University of Texas at Austin College of Pharmacy. A member of the Pharmacology faculty, who serves as Associate Dean for Pharmacy Education and holds a joint appointment as Associate Dean of the College of Pharmacy of The University of Texas at Austin, provides immediate administrative supervision of the program. In addition, several committees within the College of Pharmacy help support the day-to-day operation of the program.

Requirements for Admission

Admission to the College of Pharmacy is contingent on and separate from admission to The University of Texas at Austin. In addition to completing all prepharmacy course requirements, each applicant must make a satisfactory score on the PCAT exam. Additional measures of scholarly accomplishments and academic potential may be evidenced by grade point average, letters of recommendation, extramural service activities, and oral and written communication skills. Preference is given to applicants who are legal residents of Texas.

Curriculum

Capitalizing on the strengths of preclinical science studies in medicinal chemistry, biopharmaceutics, pharmacology, and other biomedical courses, the Pharm.D. student spends the third professional year in doctoral courses to become proficient in the application of pharmacotherapeutics, pharmacokinetics, pharmacoeconomics, drug literature evaluation, and patient assessment. Opportunities for review, repetition, and reinforcement of scientific principles fundamental to the student’s clinical effectiveness are provided in a subsequent 42-week experiential component. This year consists of four required clerkships (two acute care, one institutional, and one ambulatory care) and three elective or selective clerkships. Through the careful selection of practice sites and preceptors, a student can acquire a wide variety of challenging professional practice experiences as well as pursue areas of special interest.

The degree is conferred on the basis of successful completion of all academic credits. Eligibility to graduate is certified by the Associate Dean for Pharmacy Education; Graduate Dean, UTHSCSA; and the Dean, College of Pharmacy, at The University of Texas at Austin.

All degree programs in Pharmacy are accredited by the American Council on Pharmaceutical Education, a specialized accrediting agency recognized by the Secretary of Education, United States Department of Education. The last site visit and accreditation review was conducted in January 1997 and the College of Pharmacy received the maximum, six-year accreditation of its degree programs. The Council may be contacted at 312-644-3575 or through its Web site at www.ACPE-accredit.org.

Additional Information

The University of Texas at Austin undergraduate catalog contains detailed information about the Pharm.D. program and the College of Pharmacy. Further information may be obtained from the College’s Web page (www.utexas.edu/pharmacy) or by writing:

Assistant Dean for Admissions
College of Pharmacy
The University of Texas at Austin
Austin, TX 78702-1074
PHARMACOLOGY

In the broadest sense, pharmacology is the study of how chemical agents, both natural and synthetic (i.e., drugs) affect biological systems. This encompasses investigation of the derivation, chemical properties, physiological and behavioral effects, mechanisms of action, biological transformations and the therapeutic and nontherapeutic uses of drugs. Pharmacology has evolved as a scientific discipline from one that merely described the overt effects of biologically active chemicals to one that explores the mechanisms, at a molecular level, through which drugs cause biological effects. It is now becoming possible, for example, to understand the specific structural sites on a protein with which a drug interacts to alter the function of that protein, be it an enzyme, receptor, etc. Training in pharmacology, therefore, includes an understanding of various basic biomedical disciplines such as biochemistry, molecular and cellular biology, and physiology. Since a key objective of pharmacology is to further the understanding of both the cause and treatment of disease, knowledge of pathophysiology also becomes an essential feature of pharmacological training. Studies currently in progress range in use from molecular biological techniques and model cell approaches to whole animal studies in which electrophysiological, biochemical, and behavioral techniques are utilized.

The first two years include coursework in basic biomedical sciences, graduate pharmacology, exposure to faculty research through individual projects in various laboratories, and participation in journal clubs and departmental seminars.

After satisfactory completion of a comprehensive qualifying examination at the end of the second year, the student chooses a dissertation research topic and a faculty advisor. Subsequent years are spent primarily in performing doctoral research. Students also attend seminars given by faculty members, guest speakers, and peers. They interact with these lecturers during special student luncheons. They also give brief presentations about their research projects and discuss and analyze scientific literature in a journal club. They travel to meetings of scientific societies (an expense allowance is provided) and have the opportunity to gain teaching experience.

Research Activities

The faculty of the Pharmacology Graduate Program is composed of 28 scientists from the Pharmacology Department as well as several other departments at the Health Science Center. Current research activities in the department are based upon a multidisciplinary approach to many areas of biomedical research with major strengths in the areas of neuropharmacology, molecular pharmacology, and cardiovascular pharmacology.

- Current investigations in the area of neuropharmacology focus upon the role of serotonergic and adrenergic receptors as mediators of various behaviors and the action of anxiolytic and antidepressant drugs. These include the following: investigation of the interactions between serotonin receptor subtypes and their role in the action of psychotropic drugs; the biological aspects of antidepressant drugs; quantitative autoradiographic characterization of serotonin and adrenergic receptor subtypes in brain; pharmacokinetic modeling of serotonin receptor ligands; regulation of central beta-adrenoceptors and serotonin receptor subtypes; the role of the central noradrenergic system in response to stress and immunocytochemical and in situ hybridization studies of the effect of stress on the expression of the α1 adrenoceptor.
- The cellular and molecular mechanisms which underlie pain and neurogenic inflammation are being investigated at the level of the primary sensory neurons. The role of presynaptic neurotransmitter receptors in modulating neurosecretion from nociceptive sensory neurons as well as the endogenous ligands, drugs, or other substances which activate these receptors are being studied. Of special interest is the role of nicotine and nicotine agonists in activating neurosecretory mechanisms in sensory neurons. At the level of the spinal cord, the role of monoamines and excitatory amino acids in modulating afferent transmission of pain is also being investigated.
- Additional areas of investigation include the role of G proteins in signal transduction and interactions between receptors signal transduction systems; the neuropharmacology of receptor-mediated regulation of neurotransmitter release and the coupling of calcium channels and second messenger systems; electrophysiology and biochemistry of brain slices and cell cultures; the effect of chronic administration of benzodiazepines, barbiturates, alcohol and neurosteroids on regulation of GABA receptor binding, function and gene expression, and the effects of alcohol on NMDA function and gene expression.
- Research in Molecular Pharmacology includes investigations on the following topics: receptor mechanisms involved in regulation of tyrosine hydroxylase gene expression and how the expression of this gene is affected by aging; the use of site-directed mutagenesis, phosphopeptide mapping and kinase assays to characterize the human insulin, its mechanism of receptor signal transduction, and its role in the induction of insulin resistance; molecular evolutionary and molecular modeling studies of vasopressin and oxytocin receptor subtypes; cell cycle regulation of P70 S6 kinase and signal transduction pathways involved in its activation; receptor mechanisms involved in regulating tyrosine hydroxylase gene expression and the various signal transduction mechanisms that mediate the effects of selected neurotransmitters and neuromodulators on tyrosine hydroxylase gene expression.
- Cardiovascular research focuses on the role of the CNS in the regulation of cardiovascular function; the role of
various neurotransmitters in the central regulation of sympathetic nervous system function and vasopressin release; the role of estrogen in the regulation of sympathetic nerve function; the mechanism of action, the hemodynamic and neuroendocrine effects and the interactions of antihypertensive drugs. In addition, studies are in progress that focus on the cellular and molecular responses of the vascular endothelium to hemodynamic stress and the vascular cellular mechanisms involved in arterial restenosis.

- Other investigations include the following: the mechanisms of ethanol-induced fetal neuro- and hepatotoxicity and the role of reactive metabolites in oxidative damage to fetal cell membranes; the investigation of rapid metabolic processes in the CNS utilizing rapid inactivation techniques and chemical and pharmacological characterization of extracts from Oriental folk medicines as potential therapeutic agents.

Funding for these research projects comes from grants and contracts awarded to the Health Science Center on the behalf of individual investigators. The majority of the current funding comes from the National Institutes of Health, including grants from the National Heart, Lung and Blood Institute; the National Institute of Neurological and Communicative Disorders and Stroke; the National Institute of Mental Health; the National Institute of Alcohol Abuse and Alcoholism; and the National Institute of General Medical Sciences. At present, additional support for research is being provided by the American Heart Association, the Howard Hughes Medical Institute, the Pharmaceutical Manufacturers Association Foundation, various pharmaceutical companies, and the Department of Defense.

Requirements for Admission

Applicants for admission must have a B.A. or B.S. degree in a related field. It is suggested that students have completed two semesters of general biology, organic chemistry, general physics, and calculus. In addition, a minimum score (verbal + quantitative) of 1000 on the Graduate Record Examination General (Aptitude) Test and a minimum 3.0 GPA are preferred. Foreign applicants must have a minimum score on the TOEFL examination of 550. Completed applications will be considered beginning January 15th of each year.

Financial Support for Graduate Students

Financial support is awarded on an annual basis to all students enrolled in the Pharmacology Ph.D. program. Stipend support is awarded for at least five years as long as students are enrolled full-time and remain in good academic standing in graduate school. Nonresident students receiving a teaching assistant stipend are eligible for resident tuition rates.

Postgraduate Positions for Program Graduates

Most graduates of the doctoral program in pharmacology have remained in biomedical research. Recent graduates are engaged in postdoctoral training throughout the United States and those who have completed postdoctoral training hold positions as faculty in medical and dental schools or are employed by pharmaceutical companies, private research foundations, biotechnology firms, and government agencies.

Curriculum

No specific number of semester hours is required for the attainment of the Doctor of Philosophy degree; however, mastery of a well chosen and meaningful program of graduate courses is required. Special emphasis is placed on flexibility in the graduate degree program in Pharmacology so it may relate to the interests, purposes and needs of individual students. The curriculum is designed to give students a comprehensive background in the basic biological sciences through coursework in biochemistry, molecular biology, physiology, and neuroscience. Initially, students obtain laboratory experience through a series of laboratory rotations in different research laboratories of the faculty.

Upon successful completion of the required coursework, students are required to pass a comprehensive qualifying examination in pharmacology. The qualifying examination is not given until the student has completed the required courses and has met any additional departmental requirements. The Committee on Graduate Studies guides the initial program of study and makes a recommendation for candidacy for the Ph.D. degree based upon the student’s performance on the qualifying examination, in graduate courses, and laboratory rotations.

Following admission to candidacy for the Ph.D. degree, students develop a dissertation research proposal and conduct research under the direction of a faculty advisor and a dissertation supervisory committee. The supervisory committee reviews the student’s choice of research problem for the dissertation and proposals for its solution and periodically meets to review the student’s progress. The basis on which the Ph.D. degree is finally awarded is the candidate’s demonstration of acquired skills and knowledge in the selected field of specialization and the ability to do independent work in the area. Upon completion of the dissertation and its acceptance by the supervisory committee, a Final Oral Examination on the dissertation is scheduled.

Required Courses for the Ph.D. Degree

The Pharmacology Curriculum is continually reviewed and the format and content of the current graduate courses is revised to incorporate topics of current scientific interest as well as to incorporate changes in the graduate curriculum.
PHAR 5001 Pharmacology
4.0 Semester Credit Hours
This course is a study of the general principles of action of drugs used for the treatment and alleviation of symptoms of medical and dental diseases including pharmacodynamics of major drug groups, toxicology, and contemporary prescription writing.

PHAR 5013 Principles of Pharmacology
3.0 Semester Credit Hours
Prerequisite: Organic chemistry
Principles of drug action; receptor classification and quantitation; dose-response relationships; cellular mechanisms of drug action; fundamental concepts of drug-receptor interactions; voltage-gated and ligand-gated ion channels; drug actions mediated by transduction and non-transduction enzymes; time course of drug action; absorption, distribution, biotransformation and elimination of drugs; pharmacokinetics; experimental approaches to drug action.

PHAR 5090 Seminar
1.0 Semester Credit Hour
Presentation and discussion of recent advances and research by staff, students, and outside scientists.

PHAR 5091 Special Topics in Pharmacology
1.0 Semester Credit Hour
This is a special laboratory rotation for first-year students that is offered during the fall semester and consists of one-week laboratory rotations in ten different faculty laboratories of the student’s choice. The course is graded on the basis of satisfactory (S) or unsatisfactory (U).

PHAR 6020 Molecular and Pharmacological Basis of Therapeutics
2.0 Semester Credit Hours
Prerequisites: Graduate standing and appointment as teaching assistant
This course provides the graduate student with current knowledge of how genetic variants can affect drug response and the potential to optimize drug therapy. Course format will include lectures, discussion of selected literature, individual student presentations, and the opportunity for the development of a mini pharmacogenetic/genomic protocol and consent form to address a clinical/biomedical question mutually agreed upon between course director and students.

PHAR 6024 Neurobiological Basis of Learning and Memory
2.0 Semester Credit Hours
This course will provide students the opportunity to learn current knowledge of the effects of drugs on the brain that influence behavior.

Other Required Courses

INTD 6002 Ethics in Research
0.5 Semester Credit Hour
This course will deal with topics relevant to ethics in scientific research. The course will be taught on a “case study” basis, dealing with real and hypothetical situations relevant to the conduct of scientific research. Topics discussed will include, but will not be limited to: data management, peer review, recognizing scientific misconduct, authorship, and The University of Texas regulations relevant to human and animal research.

INTD 5005 Core Course I: General Biochemistry
4.0 Semester Credit Hours

INTD 5006 Core Course II: Molecular Biology
4.0 Semester Credit Hours

INTD 5007 Core Course III: Cellular Biology
4.0 Semester Credit Hours

INTD 5095 Experimental Design and Data Analysis
2.0 Semester Credit Hours

Electives

INTD 5043 Fundamentals of Neuroscience
4.0 Semester Credit Hours
This course is intended to introduce students to a broad survey of the basics of neuroscience. The course is organized into a series of modules discussing levels of neurobiological functions that range from molecular through behavioral and cognitive processes, and covering topics such as action potential, molecular mechanisms of synaptic release, neurotransmitters systems, autonomic regulation, the limbic system, sensory and motor processing, motion, cognition, and neuropsychiatric disorders.

PHAR 6025 Molecular Pharmacology
2.0 Semester Credit Hours
Prerequisites: Consent of instructor
This course will be presented in a journal club/paper discussion format and will focus on the molecular aspects of pharmacology, with emphasis on molecular biology, biochemistry, and cell biology of a variety of physiological systems subjected to pharmacological manipulation. The topics to be discussed will include molecular mechanisms of drug action, signal transduction and regulation, molecular approaches, and recent advances in areas of molecular pharmacology.
PHAR 6043 Cardiovascular Pharmacology
2.0 Semester Credit Hours
Prerequisite: PHYS 5041 Cardiovascular Physiology
This course is designed to study the site and mechanism of action of drugs that act on the cardiovascular, renal and autonomic nervous systems. Topics include physiology and pharmacology of the autonomic nervous system; mechanisms of drug modulation at the autonomic neuroeffector junction; the function of norepinephrine at the sympathetic neuroeffector junction; integrative role of the central nervous system in cardiovascular function; cellular and molecular biology of vascular smooth muscle; vascular smooth muscle and endothelial cell signal transduction; and pharmacology of the renin-angiotensin system.

PHAR 6050 Techniques in Pharmacology
2.0 Semester Credit Hours
This is a laboratory practicum course consisting of 7 laboratory units loosely organized around a common research theme: β-adrenergic receptor mechanisms in relation to autonomic control of the heart. Each unit consists of one hour of lecture and 8–12 hours of laboratory practicum in 3–4 hour sessions. The course is designed to provide information and hands-on practical laboratory experience in techniques and approaches that are both mainstream and state-of-the-art in modern multidisciplinary pharmacological research.

PHYSIOLOGY
The graduate program in Physiology provides students with the opportunity to develop academic and experimental skills necessary to pursue careers in scientific research. The program emphasizes the Ph.D. degree, but a Master of Science Degree is offered on a case-by-case basis for students with specific goals that require such training. A Master of Science degree program designed specifically for K–12 teachers is also offered.

Through formal coursework in broad areas of physiology, as well as cognate areas such as molecular and cellular biology, biochemistry, and pharmacology, students in the early stages of training gain knowledge about mechanisms of body function. Students are expected to participate in the research programs of the faculty. This background experience is designed to help students determine a particular area of scientific interest and to select an original research project. The successful completion of this research endeavor culminates in the thesis or dissertation that represents an original contribution to scientific knowledge.

To gain experience in teaching, advanced graduate students participate in lecturing and conference supervision in physiology courses under the supervision and evaluation of the faculty.

Research Activities
Research conducted by Program faculty and students is funded by both private and government agencies.

Molecular Physiology
Research in molecular physiology focuses on identification of the molecular basis of organ/tissue development, aging and disease. Mammalian models of human disease produced by gene-targeting are extensively used by Program faculty.

Cellular Physiology
Regulation of physiological functions is an important focus of program faculty. A combination of confocal ion imaging, electrophysiology, as well as recombinant DNA techniques, focus on understanding how a family of endoplasmic reticulum luminal lectin chaperones modulate intracellular calcium oscillations, a principal determinant of cell signaling. Research on the cellular mechanisms and intracellular signaling pathways controlling sodium ion and water handling by the kidney are performed to better understand how humans maintain body fluid homeostasis and blood pressure. A combination of electrophysiological techniques (whole cell and single channel patch clamp recordings) in addition to biochemical and molecular biological tools are used to investigate the role and regulation of ion channels in specific physiological processes.
Cardiovascular Physiology
Program research in cardiovascular physiology is diverse and directed toward understanding the role of transcription factors in heart development, the role of arterial baroreceptor reflexes in cardiovascular regulation, neural circuits controlling sympathovagal system function, and identification of peripheral and central mechanisms of thermoregulation. Research approaches include cultured cells, isolated organs, intact animals, transgenic and gene-targeted mice, and human studies.

Gastrointestinal Physiology
Studies focus on the regulation, expression, and physiological significance of newly discovered gastrointestinal regulatory luminal peptides. Relationships between these luminal peptides and the release of other gastrointestinal hormones and enzymes involved in gastric function, pancreatic function, and in the regulation of food intake are being investigated.

Neurophysiology
Studies focus on the basic function of specific groups of autonomic neurons and how these groups of neurons are involved in cardiovascular disease. Current studies focus on how the paraventricular nucleus contributes to autonomic disturbances that accompany angiotensin II, and sodium-sensitive models of hypertension as well as congestive heart failure. Other studies focus on the G-protein signaling pathways that act on an important neuronal potassium channel, called the M current, strongly modulated by muscarinic acetylcholine agonists. Modulation of the M current regulates the overall excitability of the neuron and the release of neurotransmitter at nerve terminals.

Physiology of Aging
The role of genes and hormonal changes in aging and extending life span is being studied using transgenic and knockout mouse models as well as mammalian cell models of cellular senescence. Unique animal models are being developed to study the effect of altering the expression of genes involved in the antioxidant defense system or DNA repair on life span and age-related pathologies. In addition, special transgenic/knockout animal models with alterations in specific hormonal systems, e.g., IGF1, insulin, growth hormone, and glucocorticoids, are being used to study the role of hormones in the aging process. In addition, cell/tissue therapies are being developed as potential treatments for age-related diseases.

Endocrine Physiology
The role of peptides regulating the hypothalamic-pituitary-adrenal and hypothalamic-pituitary-reproductive axes are being developed and studied. Other studies focus on the effects of age and food restriction on intracellular proteolytic mechanisms and insulin receptor signal transduction and insulin internalization. Studies to understand the factors regulating decreased bone mass in the pathogenesis of osteoporosis are being explored.

Requirements for Admission
Applicants for admission to the program must have earned a B.S. or B.A. degree from an accredited university or college. A minimum score (verbal + quantitative) of 1000 on the Graduate Record Examination (General Aptitude Test) is preferred. In addition, students will be expected to have completed the following undergraduate courses:

<table>
<thead>
<tr>
<th>Biology:</th>
<th>One year of general biology</th>
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<tbody>
<tr>
<td>Chemistry:</td>
<td>One year of organic chemistry; physical chemistry (recommended)</td>
</tr>
<tr>
<td>Physics:</td>
<td>One year of general physics</td>
</tr>
<tr>
<td>Mathematics:</td>
<td>Differential and integral calculus</td>
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Applicants with deficiencies in required undergraduate courses may be admitted contingent upon such deficiencies being removed prior to, or during, the first year of graduate study. Applicants to the K–12 M.S. program may take the Miller’s Analogy Test instead of the Graduate Record Examination.

Financial Support for Graduate Students
Stipends are available for qualified students. To be considered for a stipend, a student should apply for admission prior to February 1. Stipends are renewed on a yearly basis for up to five years for students who remain in good academic standing. The Physiology program stipend currently is $20,000/year.

Curriculum
Students pursuing the Ph.D. degree are expected to develop a comprehensive knowledge of physiology, which will be assessed by their performance in coursework. Introductory level graduate courses cover fundamental information in biochemistry; statistics; experimental technique; and molecular, cellular, and systems level physiology. Advanced graduate physiology courses emphasize interpretation of the current primary literature. In addition, a student must pass a comprehensive qualifying examination at the end of her/his second year. A public defense of the dissertation, which represents an original contribution to biomedical science and which is of publishable quality in reputable, scholarly journals, is required of all candidates for the Ph.D.

Required Courses for the Ph.D. Degree

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>PHYL 5040</td>
<td>Cell and Molecular Physiology</td>
<td>6.0 Semester Credit Hours</td>
</tr>
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</table>

This course covers basic molecular and physiological mechanisms common to all cells. Topics include structure and function of cell organelles, intra- and intercellular signaling mechanisms, basic concepts of eukaryotic genetics, regulation of macromolecular synthesis, biological transport processes, excitable tissues, and muscle function.
PHYL 5041  Cardiovascular Physiology
2.5 Semester Credit Hours
This course explores the physiological mechanisms by which the cardiovascular system carries out its principle functions. Mechanisms that produce and regulate cardiac pumping, organ blood flow, capillary fluid and solute exchange, venous function, and arterial blood pressure is examined. The nature and importance of various local (e.g., metabolic, endothelial cell factors, growth factors), neural, and hormonal mechanisms is emphasized. Mechanisms of integrated control of cardiovascular function in situations requiring cardiovascular adjustments (e.g., exercise, body fluid alterations) is also covered.

PHYL 5042  Renal/Acid Base Physiology
1.5 Semester Credit Hours
This course is concerned with the essential core content of renal physiology and the homeostatic regulation of acid/base balance in the mammalian system.

PHYL 5043  Respiratory Physiology
1.5 Semester Credit Hours
The mammalian respiratory system is studied using a combination format of lectures and seminar/discussions. Primary emphasis is on the mechanisms by which gas exchange is carried out, and will cover lung mechanics, ventilation, gas diffusion, and respiratory control. Selected topics are introduced to current research in cellular and molecular biology of lung cells.

PHYL 5044  Endocrine/Metabolic Physiology
2.5 Semester Credit Hours
This course provides an introduction to classical and molecular endocrinology. The basic objective is to provide an understanding of how hormones regulate physiological functions. Basic concepts covered include feedback regulation of hormone secretion and mechanisms of hormone action at all levels of organization, from the intact organism to the molecular level. Specific topics include steroid-peptide hormones, endocrine, paracrine, and autocrine signaling and neuro-endocrine interactions. The regulation of physiological processes such as gastrointestinal function, glucose metabolism, bone metabolism, and reproduction are used to understand and integrate endocrine principles.

PHYL 5080  Experiments in Physiology I
1.0 Semester Credit Hour
This course is offered concurrently with PHYL 5040 Cell and Molecular Physiology. This course is designed to provide practical demonstrations in basic experimental techniques and to illustrate how the application of these techniques helps in advancing our current understanding of cellular physiology.

PHYL 5081  Experiments in Physiology II
1.0 Semester Credit Hour
Prerequisites: PHYL 5040 Cell and Molecular Physiology, concurrent enrollment in PHYL 5041–5044, and consent of instructors
Laboratory experiences which are integrated with the physiological concepts encountered in PHYL 5041–5044.

PHYL 6090  Seminar
1.0 Semester Credit Hour
Prerequisite: Consent of instructor
Literature reports and group discussions by students and faculty.

INTD 6002  Ethics in Research
0.5 Semester Credit Hours

INTD 5005  Core Course I: Biochemistry
4.0 Semester Credit Hours

PATH 5021  Biostatistics
3.0 Semester Credit Hours
or
CSBL 5095  Experimental Design & Data Analysis
2.0 Semester Credit Hours

PHYL 6071  Supervised Teaching
1.0 Semester Credit Hour
Prerequisite: Consent of instructor
Presentation of lectures and supervision of conferences under the direction of instructors.

PHYL 6097  Research
Credit to be arranged
Research under supervising professors’ direction.

PHYL 7099  Dissertation
Credit to be arranged
Prerequisite: Admission to candidacy for Doctor of Philosophy degree
Registration for at least two terms is required of Ph.D. candidates.

Electives

PHYL 6091  Selected Topics of Physiology
2.0 Semester Credit Hours
Prerequisite: Consent of instructor
At least two courses selected from the following:
PHYL 6091-01 Cardiovascular Physiology
PHYL 6091-02 Calcium Signaling
PHYL 6091-03 Cell Biology in Neural Science
PHYL 6091-04 Endocrine Physiology and Metabolism
PHYL 6091-05 Molecular Physiology
PHYL 6091-06 Physiology of Aging
INTD 5041 Medical Neuroscience, CSBL 5011 Medical Gross Anatomy, and INTD 5043 Fundamentals of Neurosciences may be substituted for one of these selections.

Other Available Courses*

INTD 5080  Theoretical Foundations in Aging
3.0 Semester Credit Hours
Course contents will include an introduction to physical, psychological, and social perspectives of aging with emphasis on health and health care of older adults. The impact of an aging society on socioeconomic, political, and health care systems will also be explored. This is a videoconference course that is offered simultaneously and jointly taught by Faculty of UTHSCSA and UT Austin. The course may be counted as a required course for the Foundations of Gerontology requirement in the UT Austin masters and doctoral portfolio programs in gerontology. This is a core course for the proposed MS in gerontology.

INTD 6020  Effect of an Aging Population on Politics and Policy
3.0 Semester Credit Hours
This course will explore the impact of an aging population on social institutions and explore the potential utility of different approaches to responding to the social welfare demands on an increasing ethnically and racially diverse population. The course

*Does not satisfy course requirements
will examine population processes shaping the age structure of U.S. society, addressing recent changes in social institutions such as the American family. Course content will include survey of the state-of-the-art studies, reports, and government documents pertaining to demographic aspects of aging, intergenerational relationships, and income transfers, as well as investigation of the organization and financing of health care for elderly persons.

This is a videoconference course that is offered simultaneously and jointly taught by faculty of UTHSCSA and UT Austin. The course may be counted as a required course for the Foundations of Gerontology requirement in the UT Austin masters and doctoral portfolio programs in gerontology. This is a core course for the proposed MS in gerontology.

**PHYL 5050**  Selected Topics: Gerontology Studies – Biology of Aging

*3.0 Semester Credit Hours*

Prerequisite: bachelor's degree and entrance into the graduate program

This course will be offered on the UTHSCSA campus and via teleconferencing to the Austin campus. The content will include: general concepts of aging; physiology of aging; aging and disease; and molecular, genetic, and cellular basis of aging.

The course is available to all UTHSCSA graduate students. Fellows in the clinical programs as well as students from other institutions in the area are invited to apply as Special Students. In addition, the course will be offered to UT-Austin graduate students via video conferencing, as part of the proposed MS Program in Gerontology.

**PHYL 6010**  Selected Topics: The Role of Aging in the Politics of Health and Long-Term Care Reform

*2.0 Semester Credit Hours*

Prerequisite: bachelor’s degree and entrance into the graduate program

This course will examine the place of long-term health care on the health policy agenda, and the various alternatives and political constraints to finance a system of chronic care. Specific topics to be considered include public and private long-term care options, the experience of the public/private partnership, integrating acute-based and chronic care services for the elderly, and home- and community-based programs. A focus will be on the need to understand the confluence of demographic, social, and political forces affecting the demand for and the use of long-term care among minority Americans over 65 years old.

**PHYL 6052**  Selected Topics: Gerontology Studies — Politics and Policies in an Aging Population

*2.0 Semester Credit Hours*

This course will explore the impact of the graying of America on social institutions, and explore the potential utility of different approaches to responding to the long-term economic and health care needs of an increasing ethnically and racially diverse population. The course will examine population processes shaping the age structure of U.S. society, focusing especially on recent changes in family structure.

**Required Courses for the M.S. Degree**

Students admitted to pursue a M.S. degree are expected to satisfactorily complete required introductory level graduate courses in biochemistry; statistics; experimental technique; and molecular, cellular, and systems level physiology. Students must submit an acceptable research thesis proposal, conduct the research, and successfully defend a thesis in an oral examination to be awarded the M.S. degree.

**PHYL 5011**  Discovery of Physiological Principles I

*2.0 Semester Credit Hours*

Prerequisite: concurrent enrollment in Organ System Physiology I

This course includes discussion of historic discoveries and ethical research issues in physiology, development of laboratory skills, analysis of laboratory demonstrations, and participation in laboratory experiments in areas covered in Cell Structure and Function.

**PHYL 5014**  Discovery of Physiological Principles II

*2.0 Semester Credit Hours*

Prerequisite: concurrent enrollment in Organ System Physiology I

This course includes discussion of historic discoveries and ethical research issues in physiology, development of laboratory skills, analysis of laboratory demonstrations and participation in laboratory experiments in areas covered in Organ System Physiology I.

**PHYL 5017**  Discovery of Physiological Principles III

*2.0 Semester Credit Hours*

Prerequisite: concurrent enrollment in PHYL 5025

This course consists of laboratory demonstrations and
experiments in areas covered in Organ Systems Physiology II and acquisition of skills for analyzing and communicating the results of laboratory research.

**PHYL 5021**  
**Cell Structure and Function**  
4.0 Semester Credit Hours  
Prerequisite: concurrent enrollment in Discovery of Physiological Principles I  
The focus of this course is on physiology of the cell. Areas to be studied include cell structures and their biological roles; characteristics, roles, synthesis, and utilization of proteins, carbohydrates, and lipids in the cell; mechanisms of exchange of materials between cell and environment; and mechanism of excitability in nerve and muscle cells.

**PHYL 5024**  
**Organ Systems Physiology I**  
4.0 Semester Credit Hours  
Prerequisites: Cell Structure & Function & Discovery of Physiological Principles I; concurrent enrollment in Discovery of Physiological Principles II  
A study of the mechanisms that produce and control the functions of about one-half of the body’s organ systems.

**PHYL 5025**  
**Organ Systems Physiology II**  
4.0 Semester Credit Hours  
Prerequisites: Cell Structure & Function, Organ System Physiology I, Discovery of Physiological Principles I, Discovery of Physiological Principles II  
A continuation of the study, begun in Organ Systems Physiology I, of the mechanisms that produce and control the functions of the body’s organ system.

**PHYL 5026**  
**Physiology in Everyday Life and Medicine**  
3.0 Semester Credit Hours  
Prerequisite: Cell Structure & Function, Organ System Physiology I, and Organ System Physiology II  
Application of physiological principles to the understanding of selected issues related to lifecycle, well being, and disease.

**PHYL 6052**  
**Selected Topics: Gerontology Studies – Politics and Policies in an Aging Population**  
3.0 Semester Credit Hours  
This course will explore the impact of the graying of America on social institutions, and explore the potential utility of different approaches to responding to the long-term economic and health care needs of an increasing ethnically and racially diverse population. The course will examine population processes shaping the age structure of U.S. society, focusing especially on recent changes in family structure.

**PHYL 6091**  
**Selected Topics: Cell Biology & Neural Science**  
Variable Semester Credit Hours

**PHYL 6097**  
**Research**  
Credit to be arranged  
Research under supervising professors’ direction.

**PHYL 6098**  
**Thesis**  
Credit to be arranged  
Prerequisite: admission to candidacy for Master of Science degree  
Registration for at least one term is required of M.S. candidates.

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**RADIOLOGICAL SCIENCES**

The graduate program in Radiological Sciences is designed to prepare students to participate in the development and transmission of scientific knowledge concerning the uses of radiant energy forms in the diagnosis and treatment of human diseases. The degrees offered are: (1) Ph.D. or Master of Science degree specializing in Medical Physics, (2) Ph.D. degree specializing in Radiation Biology (includes program for MD residents in Radiology, Radiation Oncology, or Psychiatry to obtain PhD in Human Imaging track), or (3) Master of Science degree specializing in Medical Health Physics.

The curriculum provides an opportunity for students to acquire a core of fundamental knowledge through a synergistic program of formal courses, seminars, teaching opportunities, and hands-on research experience. Each student is encouraged to design, with the assistance of a research advisor, an individual course of study consistent with her/his career goals.

**Research Activities**

The research program in Radiological Sciences acts as a bridge between basic sciences and the application of such knowledge in the diagnostic and therapeutic processes of medicine. Exceptional facilities are available in the areas of nuclear magnetic resonance imaging, computer image analysis, nuclear medicine imaging, x-ray imaging, gamma-ray irradiation, microwave irradiation, and chemical analysis of contrast agents. Ongoing research programs cover a wide range of modern imaging, irradiation effects, and radiation applications. These programs are supported by grants from federal and private agencies. Extensive facilities are available to aid in the study of a wide range of radiation interaction problems in biological materials.

**Requirements for Admission**

In addition to meeting the general requirements for admission to the Graduate School of Biomedical Sciences, applicants to the program in Radiological Sciences must have obtained a baccalaureate degree in natural science or engineering. A baccalaureate degree in some other field must have provided sufficient science and mathematics courses to give the applicant the equivalent of a degree in natural science or engineering. Applicants must have undergraduate credit for the following courses:

**Biology:**  
Two semesters of general biology (two years for Radiation Biology)

**Chemistry:**  
Two semesters of general chemistry (through biochemistry for Radiation Biology)

**Physics:**  
Two years of general physics (two semesters for Radiation Biology)

**Mathematics:**  
Through calculus and ordinary differential equations
Clinical departments geared toward the next steps in 21st century medicine. The program provides for research in techniques with rigorous clinical residency training to create a new cadre of research leaders for academic medicine. The PhD degree requires graduate imaging courses in addition to MD basic science courses.

**Required Courses for the Ph.D. Degree**

RADI 5015 Physics of Diagnostic Imaging I 3.0 Semester Credit Hours
This course introduces the student to the basic principles and radiological practice using noninvasive imaging systems. Topics include production of x-rays, interaction of radiation with matter, and the physics of imaging using computed tomography, ultrasound, and magnetic resonance.

PATH 5021 Biostatistics 3.0 Semester Credit Hours
(See Coordinate Graduate Courses at the end of the Graduate School section.)

RADI 5025 Basic Radiation Biology 3.0 Semester Credit Hours
Prerequisite: consent of instructor
An overview of the physics and chemistry of radiation biology; the biological effects of ionizing and non-ionizing radiations and hyperthermia at the cellular and tissue levels and whole body and late effects

RADI 5090 Seminars in Radiological Sciences 1.0 Semester Credit Hour
Each student is required to register a minimum of two terms if following an M.S. degree plan or four terms if following a Ph.D. plan. Seminars will review current findings in the field.

INTD 6002 Ethics in Research 0.5 Semester Credit Hour
This course will deal with topics relevant to ethics in scientific research. The course will be taught on a "case study" basis, dealing with real and hypothetical situations relevant to the conduct of scientific research. Topics discussed will include, but will not be limited to: data management, peer review, recognizing scientific misconduct, authorship, and The University of Texas regulations relevant to human and animal research.

RADI 6024 Radiological Anatomy and Physiology 3.0 Semester Credit Hours
This course will provide students with an opportunity to learn anatomy, physiology and commonly used medical terminology as it relates to radiologic imaging. Anatomic and physiologic features will be illustrated with radiologic images in formats commonly encountered in clinical radiology. By the end of the course, students are expected to be familiar with basic medical terminology and have a good understanding of medical anatomy, physiology and some basic pathology as related to specific organs for which radiologic images are commonly applied.
RADI 6071 Supervised Teaching  
Credit to be arranged  
This course is a presentation of lectures and supervised teaching under the direction of faculty.

RADI 6097 Research  
Credit to be arranged  
This course is supervised research under the guidance of a faculty member.

RADI 6098 Thesis  
Credit to be arranged  
Prerequisite: Admission to candidacy for the Master of Science degree  
Registration for at least two terms is required for M.S. candidates.

RADI 7099 Dissertation  
Credit to be arranged  
Prerequisite: Admission to candidacy for Doctor of Philosophy degree  
Registration for at least two terms is required for Ph.D. candidates.

Electives
RADI 0001 Object-Oriented Programming for Physicists  
3.0 Semester Credit Hours  
A course designed to teach students to design and implement a large programming project in the C-language. The programming homework assignments are designed so that students can integrate them as components of their global project. Students are encouraged to select their project topic, but emphasis is on Diagnostic and Therapy Physics applications.

RADI 5001 Basic Radiation Safety in the Laboratory  
1.0 Semester Credit Hour  
This course provides the student with the opportunity to gain a conceptual understanding of the radiation protection principles involved in the research, diagnostic, and therapeutic uses of radiation sources. This course will cover the safe receipt, use, storage, and disposal of radiation sources in the biomedical research setting. The contents of this course fulfill UTHSCSA training requirements in order to use radioactive materials on campus. Successful participants will earn three UTHSCSA safety certificates of completion: Basic Radiation Safety Training, Basic Laser Safety Training, and Basic Laboratory Safety Training.

RADI 5005 Fundamentals of Radiation Dosimetry  
3.0 Semester Credit Hours  
This course is a detailed study of the fundamentals of radiation dosimetry in general rather than dealing only with its application in medical and health physics. Coverage includes charged particle and photon interactions with matter, the relationship between interactions and absorbed dose, cavity theory, ion chamber design and theory, and calibration techniques using ion chambers.

RADI 5010 Medical Biophysics  
3.0 Semester Credit Hours  
This course is an introduction to the basic principles of biophysics as applied to medicine and biology. Emphasis will be placed on non-imaging topics of medical biophysics such as mechanics, thermodynamics, diffusion, electrical conduction, biomagnetism, and light spectroscopy.

BIOC 5011 General Biochemistry  
5.0 Semester Credit Hours  
Prerequisites: General chemistry, organic chemistry and physics  
This course is a survey of the field of biochemistry.

RADI 5011 Radiation and Nuclear Physics  
3.0 Semester Credit Hours  
This course reviews nuclear structure, interactions of radiation with matter, and the statistical nature of radiation. The course covers gas, scintillation, and solid-state detector technologies and their applications, including spectroscopy.

RADI 5018 Physics Measurements in Imaging  
2.0 Semester Credit Hours  
Prerequisite: Simultaneous enrollment in RADI 5015  
This is a laboratory course focusing on performance of measurements used in quality assurance (QA), system characterization, and acceptance testing of medical imagers.

RADI 5020 Principles of Health Physics I  
3.0 Semester Credit Hours  
This course covers basic principles of protection dealing with the major forms of ionizing radiation are presented.

CSBL 5035 Cellular Biology  
5.0 Semester Credit Hours  
This course is an introduction to the cell, the molecular organizations of cells and their development into multicellular organisms.

RADI 6012 Physics of Nuclear Medicine  
3.0 Semester Credit Hours  
Prerequisite: RADI 5011  
This course is a study of physical principles of planar, SPECT and PET radionuclide imaging; instrument theory; dosimetry; computer uses; and safety considerations.

RADI 6014 Physics of Dental Imaging  
2.0 Semester Credit Hours  
This course is a survey of imaging procedures used in modern dentistry with an emphasis on the clinical objectives and physical principles underlying intraoral, panoramic, cephalometric and digital dental radiography.

RADI 6016 Advanced Diagnostic Imaging  
3.0 Semester Credit Hours  
Prerequisite: RADI 5015  
This course includes theory and applications of various forms of electronic imaging systems; advanced diagnostic imaging principles involving mathematical image analysis, digital image processing, digital image display and concepts of electronic imaging.

RADI 6017 Human Behavioral Imaging: Methods  
3.0 Semester Credit Hours  
This course covers the use of noninvasive brain imaging techniques to study to functional organization of the human brain.

RADI 6018 Human Behavioral Imaging: The Paradigms  
3.0 Semester Credit Hours  
This course is designed to explore the use of noninvasive imaging techniques and strategies to study the functional organization of the human brain. It covers the paradigms used for studying a variety of brain functions including perception, action, emotion, and cognition.
RADI 6019 Medical Image Processing
3.0 Semester Credit Hours
Prerequisite: RADI 6016 Physics of Diagnostic Imaging II
This course is an introduction to the basic principles of image processing as applied to digital radiography, computed tomography, ultrasound and magnetic resonance images.

RADI 6020 Human Behavioral Imaging: Systems
3.0 Semester Credit Hours
This course is designed to explore the use of noninvasive imaging techniques and strategies to study the functional organization of the human brain. This semester reviews current research and developments in brain mapping in both health and disease.

RADI 6023 Clinical Medical Physics Laboratory
1.0–9.0 Variable Semester Credit Hours
This course offers the opportunity for medical physics students to work directly with professional medical physicists in a clinical setting.

RADI 6028 Advanced Molecular Radiobiology
3.0 Semester Credit Hours
Prerequisite: RADI 5025
This course covers the mechanisms of action of ionizing and non-ionizing radiation on cells and molecules.

RADI 6030 Physics of Radiotherapy
3.0 Semester Credit Hours
Theory, design and operation of radiation-producing equipment used in radiation therapy are introduced. Exposure and absorbed dose calculations, patient dosimetry, treatment planning and use of computers in radiation therapy are covered.

RADI 6031 Physics Measurements in Radiotherapy
2.0 Semester Credit Hours
Performance of measurements on radiation therapy equipment used to determine therapy treatment parameters is the opportunity for study in this course.

RADI 6033 Advanced Radiotherapy Physics
3.0 Semester Credit Hours
This course includes the coverage of advanced radiation therapy special topics: intensity modulated radiation therapy, advanced brachytherapy, and radiation therapy shielding.

RADI 6035 Radiotherapy Clinical Practices
3.0 Semester Credit Hours
Prerequisite: RADI 6030
Students have the opportunity to participate in calibration measurements and procedures for a wide variety of radiotherapy units while receiving clinical training at participating institutions under the supervision of a clinical physicist.

RADI 6036 Principles of Computer-Aided Dosimetry
3.0 Semester Credit Hours
This course is designed for students specializing in physics of radiation therapy and potential students should talk to the instructor before enrolling. The course is very labor intensive and requires considerable time to develop the necessary programs and is oriented towards program development rather than classroom lectures.

RADI 6042 Non-ionizing Radiation Biology
1.0–3.0 Semester Credit Hours
This course is an overview of the biological and known or potential health effects of non-ionizing radiation, with attention to radio frequency radiation in the microwave range, extremely low frequency (ELF) field exposures, LASER emissions, and ultraviolet (UV) light exposure.

RADI 6050 Magnetic Resonance Imaging
3.5 Semester Credit Hours
This course explores the physics of magnetic resonance image formation through discussion of imaging problems, reviews of current research topics, and hands-on experience in MRI laboratories.

RADI 6051 Biomedical Magnetic Resonance
4.0 Semester Credit Hours
This course covers the principles of MR spectroscopy and MR imaging as applied to the noninvasive assessment of biochemistry and physiology in living systems.

RADI 6060 Biophotonics and Optical Imaging
3.0 Semester Credit Hours
Optical methodologies for imaging, diagnosis, and therapy are rapidly advancing in biology and medicine. This course will review basic elements of optics and optical sources, especially lasers and light-emitting solid state devices, in the context of biomedical applications. Dosimetry, tissue optics, and the principles of laser-tissue interaction will be considered in depth. Current medical uses of lasers will be surveyed, along with their scientific and technical foundations. The course will conclude with several case studies of research areas that are currently "hot topics" in biomedical optics. The course grade will be based on one exam given during the course, and a final term paper on a topic chosen by the student and approved by the instructors.

RADI 6091 Current Topics in Radiological Sciences
2.0 Semester Credit Hours
This course covers topics of special interest which may include emerging and new modalities in radiological sciences relating to x-ray, nuclear, or magnetic imaging.
COORDINATE GRADUATE COURSES

The following courses are offered to provide computational and statistical background pertinent to the design and interpretation of experimental research projects.

INTD 3012/5212 Introduction to Computers for the Health Science Professional
2.0 Semester Credit Hours
Prerequisite: College algebra
A survey of elementary concepts essential to understanding how computers operate and how they can be used as tools to enhance the work of the health science professional. Specific applications are discussed from the perspectives of both the personal computer and mainframe.

INTD 5080 Theoretical Foundations in Aging
3.0 Semester Credit Hours
Prerequisites: Bachelor’s degree and entrance into a graduate program
This course is designed for students currently enrolled in the graduate programs at UT-Austin, UTHSCSA, and students admitted to the Graduate School as Special Students. This is a videoconference course that is offered simultaneously and jointly taught by faculty of The University of Texas at Austin. The course may be counted as a required course for the Foundations of Gerontology requirement in the UT-Austin masters and doctoral portfolio programs in gerontology. This is a core course for the proposed MS in Gerontology. Course content will include an introduction to physical, psychological, and social perspectives of aging with emphasis on health and health care of older adults. The impact of an aging society on socioeconomic, political, and health care systems will also be explored.

PATH 5021 Biostatistics
3.0 Semester Credit Hours
Prerequisite: 1 semester of calculus or consent of instructor
This course is an introduction to biostatistics. Emphasis is upon application of statistical methods to biological problems. Topics include descriptive statistics, probability, hypothesis testing and estimation.

PATH 5022 Design of Experiments
3.0 Semester Credit Hours
Prerequisite: PATH 50321 or consent of instructor
The emphasis of this course is upon design principles and application to biological experiments. Topics include completely randomized designs, Latin square designs, nested experiments and factorial arrangements of treatments.

PATH 5024 Biostatistical Computing Laboratory
1.0 Semester Credit Hour
Prerequisite: Previous or current enrollment in PATH 5021 or equivalent.
This course is designed to provide an introduction to the use of the computer in the solution of biostatistical problems encountered in research in biology and medicine. Emphasis is on proper use of statistical techniques, selection of appropriate software and proper interpretation of output from computer programs.

PATH 5025 Individual Study in Biometry
Credit to be arranged
Prerequisite: Consent of instructor
This course is for students who wish to study special problems in biometry or application of biometric methods to problems in the life sciences. A plan of study is determined by the student and the biometry faculty with topics varying according to the interests and requirements of the student.

PATH 6326 Applied Regression Analysis
3.0 Semester Credit Hours
An introduction to regression analysis (multiple linear regression models, multiple logistic regression models, non-linear regression models) with emphasis on practical aspects, fitting models, assessing validity of models, effects of model inadequacies, variable selection, parameter estimation and inference.

CLINICAL LABORATORY SCIENCES

The Master of Science degree in Clinical Laboratory Sciences (described in the School of Allied Health Sciences section of this Catalog) is administered by the Graduate School. Students in the program follow procedures and policies of the Graduate School of Biomedical Sciences.

DENTISTRY

Master’s degree programs in Dental Diagnostic Science, Endodontics, Periodontics, and Prosthodontics (described in the Dental School section of this Catalog) are administered by the Graduate School. Students in these programs follow procedures and policies of the Graduate School of Biomedical Sciences.

DENTAL HYGIENE

The Master of Dental Hygiene program (described in the School of Allied Health Sciences section of this Catalog) is administered by the Graduate School of Biomedical Sciences. Students in the program follow procedures and policies of the Graduate School of Biomedical Sciences.

NURSING

Graduate programs leading to the Master of Science in Nursing and the Doctor of Philosophy degrees (described in the School of Nursing section of this Catalog) are administered by the Graduate School. Students in these programs follow procedures and policies of the Graduate School of Biomedical Sciences.
Medical School

Mission
The mission of the UTHSCSA Medical School is to serve the needs of the citizens of Texas by providing medical education and training to medical students and physicians at all career levels in an environment that is flexible and emphasizes professionalism with special commitment to the preparation of physicians in both the art and science of medical practice; conducting biomedical and other health-related research paying particular attention to translational research; delivering exemplary quality health care; and providing a responsive resource in health-related affairs for the nation and the state, with particular emphasis on South Texas.

Accreditation
The Medical School is fully-accredited by the Liaison Committee on Medical Education, the body recognized by the U.S. Department of Education for accreditation of programs of medical education leading to the M.D. degree in the United States.

Admission and Application
Information about specific admission requirements are detailed in the Applicant Viewbook of the Medical School. Applicants must have at least 90 semester hour credits from a United States or Canadian college or university with no grade lower than a C in required course work. Applicants must take the Medical College Admissions Test (MCAT) no later than August of the year preceding anticipated matriculation and direct that scores be sent to The Texas Medical and Dental Schools Application Service in Austin, http://www.utsystem.edu/tmdsas, which is also the source of the Web-based application forms.

Acceptance Considerations
Candidates for admission are evaluated not only on the basis of their academic background and preparation for medical school, but also for integrity, maturity, motivation, judgment, and resourcefulness. The Committee on Admissions evaluates each candidate’s application to make an assessment of the individual’s academic background, performance on the Medical College Admission Test (MCAT), the recommendation of the premedical advisor, and the person’s nonacademic achievements. Further evaluation of the most promising candidates is made by means of personal interviews, invitations for which are issued by the Admissions Committee.

The same criteria for evaluation are applied to all candidates, and no distinctions are made in favor of or against any applicant based on age, race, or sex. Although certain disabilities or combination of disabilities might prevent a candidate from meeting required technical standards, this institution is committed to avoiding discrimination against an otherwise qualified individual with disabilities.

The Medical School will announce its initial acceptances on February 1. Afterwards, acceptances will continue from a pool of alternates until all positions in the class are filled. Candidates whose applications are rejected by the Admissions Committee with or without personal interviews shall be notified as soon as possible after the committee’s action.

An applicant receiving an acceptance of admission will be requested to file a letter of intent to enroll within two weeks of receipt of acceptance. The professional schools of The University of Texas System reserve the right to withdraw offers of acceptance to individuals who hold places in the entering classes of more than one professional school for longer than three weeks without previous justification by the applicant and consent by the schools involved.

Because some of the medical schools in Texas begin their academic year earlier than September, all LCME-accredited medical schools in Texas have agreed not to offer acceptances to candidates already enrolled at another medical school in the state after July 1.

Advanced Standing
The acceptance of students with advanced standing is dependent upon the availability of clinical and academic facilities. Each year the Medical School considers class size and the imperative of maintaining high quality training in deciding whether additional students with advanced standing will be admitted. In such rare cases, only students currently enrolled in a LCME accredited medical school in good academic standing can be considered. Given the scarcity of spaces, preference is given to those who must move to San Antonio for reasons of personal hardship and who have not only the consent but also the active support of their schools for the proposed move. The Medical School in San Antonio will determine in each case the viability of the proposed transfer from an academic viewpoint and establish the necessary courses and other requirements and level at which the transfer would take place.

No nonresident of the State of Texas may be enrolled with advanced standing if the result of that enrollment would increase to greater than ten percent the percentage of nonresidents enrolled in the class of which the student would be a member.

Application forms and inquiries concerning advanced standing admission should be obtained from and addressed to the Office of the Associate Dean for Academic Affairs of the Medical School.
Scholarships
Limited scholarship assistance is available within the Medical School. General scholarships are initially awarded based on a student’s admission ranking as determined by the Admissions Committee following a review of all admission criteria factors. For those scholarships which are donor-designated, selection is based on criteria established by the donor. Application is unnecessary for either category. Scholarships may be renewable depending upon academic performance and/or conditions stated by donors.

Faculty Advisors
Each student will be assigned a faculty advisor upon matriculation. Advisors have been selected who have an interest in assisting students with various issues that the student encounters and in directing the student to avenues of opportunity. The Faculty Advisor Program is under the direction of the Associate Dean for Student Affairs. Details of the Faculty Advisor Program are provided during Orientation Week.

Absence, Dismissal, and Readmission
Absences of short duration may be granted by the Associate Dean for Student Affairs in the case of illness or personal emergency with the understanding that the student arrange with the faculty to make up all work which is missed. Absence for any cause shall, however, be reported by the student, within one week of the student’s return, to the Associate Dean for Student Affairs who will determine if the absence was “excused.”

If requested in writing by the student, a leave of absence for an extended period of time may be granted by the Dean if such absence is considered to be in the best interests of the student. To reach this decision, the Dean will often rely not only on the student’s expressed wishes, but also on the opinion of her or his faculty advisor, faculty promotions committees, or other individuals familiar with the circumstances of the case. Generally, an extended leave of absence will not be granted to any student prior to the completion of at least one year of medical school, and while the exact length of the leave of absence will vary in each case, it shall, under no circumstances, exceed one year.

Students who fail to register and pay tuition and fees within the specified dates will be considered to have terminated their connection with the Medical School unless permission to register and pay tuition at a later date has been expressly granted by the Registrar.

Students who have ceased to be enrolled in the Medical School for any reason (withdrawal, dismissal, failure to register, failure to return from leave of absence at the specified time, or leaving school without authorization) and who wish to be considered for readmission either as freshmen or with advanced standing must apply to the Dean of the Medical School. Only students returning on schedule from authorized leaves of absence will be re-enrolled without having to be readmitted.

Grades, Promotion, and Graduation
The Medical School faculty is responsible for determining a student’s fitness to be a doctor of medicine. Committees on promotion for the preclinical and clinical years of the curriculum assess the achievements and progress of each student and make recommendations for promotion, graduation, academic warning, probation, dismissal, or implementation of special academic programs. These recommendations are submitted to the Dean.

The academic standards for successful completion of each course are determined by the department or task force under which the course is administered.

Grades
Grading of courses will be based on an A, B, C, F system. Grades of A, B, and C will be considered passing. A grade of A is given for an outstanding performance; B for a very good performance; and C for a satisfactory performance. A grade of F indicates a failing performance. The grade of Incomplete (I) is reserved for those circumstances in which academic work is not attempted or completed due to illness, family emergency, or other non-academic extenuating circumstance. A grade of Incomplete (I) is not acceptable as a temporizing measure in situations of substandard academic performance.

For purposes of Class Rank, each letter grade will also be assigned a point value as follows:

- A = 4 points
- B = 3 points
- C = 2 points
- F = 0 points

No grade of D will be issued.

In those circumstances in which a student will be allowed remediation (as described below), only the pre-remediation Grade Point Average will be used for purposes of class rank.

Promotion
The standard for receiving either a passing or a failing grade for work done in any course is the prerogative of the Course Director, operating under the auspices of the Department Chairperson, or in the case of interdisciplinary courses, the Task Force Chairperson. Each Course Director will make their assessment of student performance independent of considerations of the student’s performance in other courses.

Students must satisfactorily complete all courses in each academic year in order to be promoted to the next year of the curriculum. The Clinical Promotions Committee will monitor the performance of those students in the
third and fourth years of the Medical School curriculum. The Pre-Clinical Promotions Committee will monitor the performance of students in the first and second years of the curriculum.

Throughout the academic year promotions committees will review grade deficiencies as they are reported. This evaluation will be characterized by a review of a student’s performance in the course in which a deficiency was incurred, both from a grade-received perspective and from a review of written assessments of the student’s learning activities throughout the duration of the course. Also, brief written reports from directors of other courses in which the student was (or is) involved may be requested for review by committee members during their assessment of student performance.

**Deficiencies**

Promotion committees will consider a variety of approaches to deficiency removal. These approaches may include **Remediation**, **Repetition**, and/or **Dismissal**.

**Remediation** is an academic activity that occurs at the end of an academic year, but before the beginning of the next academic year, for courses in which a deficiency has been received. In those instances where remediation is approved, the nature of the remediation activity will be determined by the committee, taking into consideration recommendations of course directors, an assessment of the student’s overall academic performance, the student’s written request, and other factors as deemed appropriate by the respective committee. Students who are successful in remediation activities are able to continue with their class into the next curricular year. The highest grade that can be achieved through remediation is a C. Also, students who are remediating deficiencies may not receive concurrent credit for any other curricular activity.

Students who are not successful in their attempt to remediate a deficiency will be required to repeat the courses in which deficiencies occurred during the next academic year. The promotion committee may also require repetition of other courses that have already been passed.

**Repetition** refers to a student repeating all or part of a curricular year in which one has incurred deficiencies. The promotion committees, following their review of a student’s academic status, will determine the most appropriate approach to facilitate a student’s acquisition of necessary knowledge. And while a student will repeat courses in which failing grades have been incurred, a promotion committee may require that a student repeat courses that have already been passed.

**Dismissal** will be warranted in some instances.

**Procedure**

Students who have incurred one or two failing grades may request that the promotion committee grant them an opportunity to remediate grade deficiencies. This request must be in writing and it should delineate those factors, both academic and personnel that, in the student’s view, would justify such action by a promotion committee. The respective promotion committee may grant such a request if, from their review, such consideration is appropriate to facilitate student learning and progress. A promotion committee may also recommend either course repetition or dismissal.

A student who has incurred three (3) academic deficiencies may request, in writing, that the promotion committee grants that student an opportunity to repeat all or part of an academic year. Those students with three (3) deficiencies who are not granted the privilege of repetition will be dismissed from the Medical School.

Students who incur four (4) or more academic deficiencies during any one academic year will be dismissed from the Medical School.

The criteria as stated apply to each year of the Medical School curriculum. In addition, no more than two (2) years may be taken to complete any one year of the curriculum. No more than six (6) years may be taken to complete the medical curriculum. This latter condition does not include either periods of formal Leaves of Absence or those times when an individual may be placed on Independent Study status for purposes of preparation for the Step I examination of the United States Medical Licensing Examination (USMLE).

**United States Medical Licensing Examination (USMLE)**

Medical students must pass the Step I examination of the United States Medical Licensing Examination (USMLE) in order to be promoted into the Senior year. All students must have taken the Step I examination in order to begin the clinical clerkships of the Junior year. Those who are unsuccessful will be allowed to complete the Junior Clerkships. Those students will not be allowed, however, to begin either Senior Electives or Senior Selectives until they have again sat for that examination. Three (3) failures of the Step I examination of USMLE will result in dismissal from the Medical School. Medical students must take the Step II examination of the United States Medical Licensing Examination (USMLE) in order to qualify for graduation from the Medical School. The Step III examination will be taken following medical school graduation at a time determined by a state Board of Medical Examiners.

**Academic Probation**

Students who are not promoted in the routine manner from one year to the next will be considered to be on academic probation and will remain on probation until they meet the requirements for promotion.

**Academic Dismissal**

Dismissal from the Medical School for academic reasons will be considered for:
(1) Students who are unable to meet the standards for promotion to a given academic year or the standards for eligibility for graduation after one additional year during which courses were repeated in an effort to meet those standards;

(2) Students who would require repetition of courses or rotations after they have previously used a total of two additional years in order to meet the standards for promotion in previous academic years;

(3) Students who receive a grade of F in a course or rotation being repeated;

(4) Students who are unable to achieve a passing score on Step I of the USMLE examination within three attempts.

Dismissal for academic reasons will be subject to review by the appropriate Promotions Committee. The recommendations of the Promotions Committees are to the Dean. The students may appeal the recommendations of the Promotions Committee and the decision of the Dean to the Faculty Council. The decision of the Faculty Council is final with regard to academic matters. A further appeal may be made by the student to the President of UTHSCSA but only on issues of procedural irregularity.

Graduation

The degree of Doctor of Medicine is awarded by the Board of Regents upon the student’s successful completion of the prescribed curriculum, recommendation of the Faculty of Medicine to the Dean, and certification by the Dean to the President. Candidates must (1) be at least 18 years of age at the time the degree is awarded, (2) present evidence of good moral character, (3) offer evidence of having satisfactorily fulfilled all academic requirements of the medical curriculum, and (4) comply with all necessary legal and financial requirements.

Degrees will be conferred once a year on Commencement Day in the Spring. Students who complete requirements for a degree earlier in the year will be conferred the degree on the following Commencement Day, but may request the Registrar to provide a Certification of Completion on the date of graduation.

Honors

Alpha Omega Alpha (AOA) is a national society organized for the promotion of scholarship and research in medical schools, the encouragement of high standards of character and conduct among medical students and graduates, and the recognition of high attainment in medical science practice and related fields by alumni and faculty. Election, which is based upon academic excellence achieved in all required courses of the curriculum, is limited to no more than one-sixth of the total number of graduates.

Student Organizations

Descriptions of the Medical School organizations as well as those of all registered UTHSCSA student groups are in the Student Guide.

Curricular Design

The four-year medical curriculum is designed to provide a core of scientific knowledge and clinical skills that should enable successful students to progress to the necessary postgraduate training which ultimately enables a physician to care for patients. In addition to specific knowledge, the school offers an environment in which students can develop a professional and ethical attitude, and a sense of responsibility for patients that characterize the true physician. Each course, including electives and selectives, has been deemed essential in providing the training and experience that every physician must have.

First Year

The first four weeks of the first-year curriculum concentrate on learning introductory skills of patient interaction, history taking, and physical diagnosis. As students then begin the basic science courses, the clinical skills are integrated and students experience the direct application of basic science knowledge to patient care.

- Clinical Integration
- Biochemistry
- Microscopic Anatomy
- Gross Anatomy & Embryology
- Microbiology
- Neuroscience
- Physiology

Second Year

The second year builds on knowledge gained in the first year. Disease processes are taught in organ system modules with an integration of clinical sciences, pathology, pharmacology, and clinical skills.

- Advanced Clinical Examination Skills
- Introduction to the Clinical Sciences
- Pathology
- Pharmacology
- Behavioral Science
- Psychopathology

Third Year

The third year begins with preclinical courses followed by clerkships in six specialties. Beginning with Academic Year 2002–2003, 24 third-year medical students will be assigned to complete their clinical training (third and fourth years) within the Regional Academic Health Center facilities in Harlingen, Texas (see “Teaching Facilities”). Assignments to the Regional Academic Health Center will to the extent possible be based on student preference.

- Basic Cardiac Life Support
- Basic Interpretation of Electrocardiography
- Emergency Medicine
- Medical Rehabilitation

(1) Students who are unable to meet the standards for promotion to a given academic year or the standards for eligibility for graduation after one additional year during which courses were repeated in an effort to meet those standards;

(2) Students who would require repetition of courses or rotations after they have previously used a total of two additional years in order to meet the standards for promotion in previous academic years;

(3) Students who receive a grade of F in a course or rotation being repeated;

(4) Students who are unable to achieve a passing score on Step I of the USMLE examination within three attempts.
• Clinical Radiology
• Family Practice Clerkship
• Medicine Clerkship
• Obstetrics & Gynecology Clerkship
• Pediatrics Clerkship
• Psychiatry Clerkship
• Surgery Clerkship

Fourth Year
The fourth year is composed of four-week periods (rotations) which are devoted to required selectives and electives, and a five-week period of required didactic courses. Remaining time may be used for optional travel/vacation periods.

- Electives
- Required Didactic Period
  - Mandatory Didactic Courses:
    · Advanced Cardiac Life Support
    · Clinical Pathology
    · Medical Jurisprudence
    · On Becoming a Doctor
  - Elective Didactic Courses (students must choose two)
- Required Selectives
- Vacation/Travel Periods

Qualifying Examinations
Students may be exempted from participation in one or more preclinical curricular subjects if they are able to demonstrate proficiency on pre-course qualifying examinations. These examinations are offered at the discretion of the departmental chairmen and are given soon before the beginning of each course.

Course Numbering System
The four-letter prefix denotes the department presenting the course; the INTD prefix is used for interdisciplinary courses. The first digit of the number indicates the academic level at which the course is usually taken; 1-freshman; 2-sophomore; 3-junior; 4-senior. Other digits indicate the semester credit hour values and identify the course.

Course Descriptions

Freshman Year
BIOC 1005  Biochemistry

8.5 Semester Credit Hours
Department of Biochemistry
The fundamental aspects of biochemistry are presented as they apply to medicine. The topics considered include pH and dissociation, protein structure, the properties of enzymes, biological oxidation and bioenergetics, the expression of genetic information and the mechanism of protein synthesis, the chemistry and metabolism of carbohydrates, lipids and nitrogen containing compounds. Emphasis is given to biochemical mechanisms relevant to medicine.

CSBL 1005  Microscopic Anatomy

4.5 Semester Credit Hours
Department of Cellular & Structural Biology
Current concepts in cell biology and human histology are covered by means of a series of lectures and laboratory sessions. Basic information on the structure and function of cells and tissues is presented in the lectures; this is followed by staff-supervised laboratory sessions emphasizing the recognition of cells and the fundamental tissues. Each student is provided with a box of microscopic slides of human tissues. The laboratory sessions are accompanied by microscopic slide demonstrations and/or television tapes of tissues under study. Supplemental study material, such as films, television tapes, and transparent photomicrographs are available upon request through the Office of Educational Resources and the Teaching and Learning Center. The general purpose of this course is to acquaint the student with basic cytology and histology of normal human tissues, thereby offering a firm foundation of knowledge for the understanding of normal and disease processes.

INTD 1001  Clinical Integration Course

7.5 Semester Credit Hours
Interdisciplinary
The Clinical Integration Course (CIC) is an interdisciplinary course that extends throughout both semesters of the first academic year. During the first month of the academic program, this will be the only course of the medical curriculum and will provide the students an introduction to patient care. Students will have an opportunity to learn how to take a history and to do a physical examination. They will be introduced to the ethical, social, and legal aspects of interaction with patients, with emphasis on professionalism in the doctor/patient relationship. The student will also have an opportunity to learn other basic skills, such as cardiopulmonary resuscitation (CPR). During the rest of the academic year, students will spend one-half day per week in a range of activities designed to integrate basic science material with clinical application.

INTD 1041  Neuroscience

5.0 Semester Credit Hours
Interdisciplinary
Neuroscience introduces the study of the nervous system using a multidisciplinary approach. The course is presented by a Task Force with representation from basic science and clinical departments. In this way correlations between fundamental principles and their clinical application are demonstrated. The course considers the anatomy and physiology of the nervous system, introducing clinical discussions and patient demonstrations to

* $48 microscope fee for the Freshman year includes these courses.
** $32 laboratory fee for the Freshman year includes these courses.
Surgery and the Imaging Center.**/*

Structural Biology, Physiology, Pharmacology, and Medicine (Di-anatomy are emphasized in lectures and clinical presentations. Techniques are widely used. Neurophysiology and functional and gross specimens. Demonstrations and audiovisual teaching techniques are a means of illustrating the fundamentals of immunology.

Laboratory sessions are an integral part of the course and provide the opportunity to understand the principles of diagnostic microbiology. The medical student is provided an opportunity to develop proficiency in the basic technical skills required of clinical clerks, house officers, and physicians treating patients with infectious diseases. The course is taught by full-time members of the Department of Microbiology.**/*

**MICR 1005 Microbiology 5.5 Semester Credit Hours Department of Microbiology**
The medical microbiology course is designed to provide a foundation in pathogenic microbiology and to prepare the medical student for subsequent offerings in infectious diseases, pathology, pharmacology and epidemiology. The scope of the course includes the biology of microorganism; the concepts of host-parasite interrelationships for pathogenic bacteria, viruses, fungi, and parasites; and the fundamentals of immunology.

Laboratory sessions are an integral part of the course and provide the opportunity to understand the principles of diagnostic microbiology. The medical student is provided an opportunity to develop proficiency in the basic technical skills required of clinical clerks, house officers, and physicians treating patients with infectious diseases. The course is taught by full-time members of the Department of Microbiology.**/*

**PHYL 1005 Physiology 7.5 Semester Credit Hours Department of Physiology**
The course in Medical Physiology is designed to introduce students to concepts dealing with the major cellular processes and organ systems of the normal person: to explore the homeostatic mechanisms that regulate and control their behavior; and to develop skills in group problem solving. The course begins with cellular physiology with emphasis on membrane transport, excitable tissues, and muscle function. It then proceeds with the sequential coverage of the cardiovascular system, respiratory system, renal system, digestive system, and endocrine and reproductive systems.

The teaching/learning program de-emphasizes lectures, thereby providing time for individual, independent self-study from a modern textbook. It is the textbook that defines the essential core material to be mastered. Time formally scheduled for classroom activities includes a two-hour class meeting each week structured specifically to assess learning and to foster interaction and discussion between students within assigned groups.**

**ELEC 5034 Conversational Spanish Elective 0.0 Semester Credit Hours**
First-year medical students will have the opportunity to learn to begin to converse in basic Spanish.

**Sophomore Year**

**INTD 2006 Advanced Clinical Examination Skills (ACES) 6.0 Semester Credit Hours**
Interdisciplinary
The ACES course is designed to build on the clinical skills learned in the first year and to integrate knowledge gained in the basic science courses for direct application to patient care. During the organ system modules, students will be paired with a preceptor to concentrate on examination skills of a particular organ site and will learn details and interpretation of abnormal findings. The course will cover important aspects of evidence-based medicine and students will have opportunities to use these concepts throughout the year. To prepare for the clinical clerkships, students will have the opportunity to practice skills of writing a complete history and physical, writing patient progress notes, writing prescriptions, and giving oral presentations.**

**INTD 2001/2002 Introduction to the Clinical Sciences (ICS), I & II 8.0 Semester Credit Hours, ICS I 10.0 Semester Credit Hours, ICS II**
Interdisciplinary
This course encompasses the major clinical fields of internal medicine, obstetrics/gynecology, pediatrics, surgery, and surgical subspecialties. It is designed to cover all aspects of human disease states including vocabulary, data collection skills, problem solving, surgical principles, surgical pathophysiology, concepts unique and common to pediatric-aged patients, and sexual and reproductive pathophysiology. The course will be organized into organ system modules and integrated with pathology and pharmacology. Teaching format will include lectures and small-group sessions. The first semester, ICS I, will include general concepts, renal, cardiovascular, respiratory/infectious diseases, and hematology/dermatology organ system modules. ICS II, second semester, will include gastrointestinal, musculoskeletal, neuroscience, special senses, reproductive, and endocrine systems, plus trauma and toxicology.**/*

**PATH 2005 Pathology 11.5 Semester Credit Hours**
Department of Pathology
This course provides an introduction to the fundamentals of human disease (general pathology) followed by a review of the principal diseases of major organ systems (systemic pathology). Teaching methods include lectures, laboratory exercises, case conferences and reviews. The interpretation of gross and microscopic pathologic specimens is emphasized as a means of illustrating the application of principles to actual clinical diseases. The course also includes the application of clinical laboratory tests in disease diagnosis. This will be taught in an integrated fashion with ICS, ACES, and Pharmacology in the organ system modules.**/*

**PHAR 2005 Pharmacology 6.0 Semester Credit Hours**
Department of Pharmacology
This course is designed to provide the student with a fundamental knowledge of the actions and therapeutic uses of drugs. The topics covered will include basic principles of drug action, pharmacokinetics, autonomic and cardiovascular

$48 microscope fee for the Freshman year includes these courses.** $32 laboratory fee for the Sophomore year includes these courses.
pharmacology, chemotherapy, neuropharmacology, toxicology, endocrine pharmacology and special topics such as GI and respiratory tract pharmacology, and prescription writing. This will be taught in an integrated fashion with ICS, ACES, and Pathology in the organ system modules.

PSYC 2001  Behavioral Science
2.5 Semester Credit Hours
Department of Psychiatry
This course provides a medically relevant overview of the psychological, biological, social, and cultural aspects of human behavior. The instruction covers human growth and development over the life cycle, as well as the biological determinants of behavior. The doctor-patient relationship is examined.

Students participate in small group experiences where they meet regularly with faculty to focus on various topics including: interviewing skills and its associated difficulties, sociocultural issues with a focus on South Texas, and various psychological topics with respect to the physician and the patient. Trigger tapes and focused interactive discussion are extensively utilized. Approximately two-thirds of the time is spent in the classroom covering the basic substantive and conceptual content. The other one-third of the time is devoted to the small-group experience. In addition to the Department of Psychiatry faculty, which includes psychiatrists, psychologists, and sociologists, members of the Department of Family Practice, Pediatrics, OB-Gyn, Surgery, and Internal Medicine participate in the course.

PSYC 2005  Psychopathology
3.5 Semester Credit Hours
Department of Psychiatry
This course is designed to provide fundamental knowledge about descriptive and psychodynamic aspects of mental disorders. The 46 hours of classroom presentations focus on understanding basic concepts of psychopathology, diagnosing each of the mental disorders, identifying psychopathology through use of the psychiatric interview, and recognizing emotional problems commonly seen in patients with other medical disorders. Video and film recordings are used extensively in the classroom to demonstrate the mental disorders. In each of the seven two-hour periods of small-group instruction, patients are interviewed and students have the opportunity to learn to write accurate mental status reports.

Junior Year

Preclinical Didactics
The first two weeks of the Junior Year are devoted to the following didactic courses before the series of clerkships begins.

EMST 3002  Basic Cardiac Life Support
0.0 Semester Credit Hours
Department of Emergency Medical Technology
Course instruction satisfies American Heart Association Guidelines for Basic Cardiac Life Support (BCLS); successful completion merits AHA Course Completion Card. Topics include basic airway and ventilatory management of the choking and/or unconscious infant, child, and adult; cardiac chest compressions and the Heimlich Maneuver. Skills and standard AHA examinations are administered.

MEDI 3002  Basic Interpretation of Electrocardiography
0.5 Semester Credit Hour
Department of Medicine
Students will have the opportunity to learn basic principles of electrocardiography interpretation. These skills will be applicable to all of the third-year clerkships.

EMST 3001  Emergency Medicine
0.5 Semester Credit Hour
Department of Emergency Medical Technology
Emergency Medicine, a primary board specialty area, is surveyed with emphasis on those topics which set it apart from other fields of medicine. Topics include: EMS and Prehospital Care, Environmental Medical Emergencies, Emergency Pediatrics, Resuscitation Medicine, and Wilderness and Disaster Medical Care.

REHB 3090  Medical Rehabilitation
0.5 Semester Credit Hour
Department of Rehabilitation Medicine
Students will have an opportunity to learn to predict how illness may interfere with the ability of a patient to carry out functional activities in her or his environment and to appreciate the steps necessary to prevent these predictable complications or to restore lost function in patients with multiple disabling conditions.

RADI 3090  Clinical Radiology
0.5 Semester Credit Hour
Department of Radiology
Introduction to radiological tests and procedures, oriented to diagnosis and cost effective work-up of specific clinical problems.

Clerkships

FAPR 3005  Family Practice Clerkship
6 weeks 7.0 Semester Credit Hours
Department of Family and Community Medicine
The family practice clerkship introduces students to the principles, philosophy, and practice of family medicine, including fundamental concepts of comprehensive, continuous, cost-effective, family-oriented medical care.

Students participate in the care of patients in various outpatient and inpatient settings. Students will have the opportunity to practice clinical problem-solving in the undifferentiated patient and to improve their basic clinical skills. Students are expected to gain basic knowledge in the diagnosis and management of common family medicine problems, health promotion/disease prevention, and geriatrics.

Successful completion of all required preclinical courses is prerequisite to enrollment in any of the clinical clerkships.

MEDI 3010  Medicine Clerkship
12 weeks 14.0 Semester Credit Hours
Department of Medicine
The objectives of this clinical experience are to provide opportunities for students to develop patient evaluation skills, productive self-learning techniques, a sound pathophysiological approach to medical disease, a concern and awareness for the patient’s needs, and personal professional behavior.

The student spends eight weeks, divided into two four-week blocks, assigned to the inpatient General Medicine Service. An additional four weeks are spent in outpatient services. Bedside clinical teaching
is emphasized by asking the student to perform patient evaluations, to contribute to the care of selected patients and to participate in the clinical rounds of the services. During this clerkship the student receives intensive instruction from the Internal Medicine house staff and faculty. In addition, the student is expected to undertake independent patient-oriented reading and to systematically review pertinent information introduced during the preclinical years. Finally, students attend a series of clinical conferences including medical grand rounds, morbidity and mortality conferences, clinical subspecialty conferences and organized courses in electrocardiography and nutrition.

Successful completion of all required preclinical courses is prerequisite to enrollment in any of the clinical clerkships.

OBGY 3005 Obstetrics and Gynecology Clerkship***
6 weeks 7.0 Semester Credit Hours
Department of Obstetrics and Gynecology
A clerkship consisting of gynecology and obstetrics is provided for medical students who have successfully completed the course in reproductive physiology and pathophysiology. The goal of the clerkship is to provide students with opportunities to prepare to function as a house officer capable of providing preventive care and treatment or competent to identify the patient’s need for direction into an appropriate care environment. Supervised direct patient experience occurs in the obstetrical wards, operating room, labor and delivery suite, emergency room, and the obstetrical, gynecologic, family planning, and cancer detection clinics. A guide identifying instructional goals and the mechanisms to reach them is provided. Twenty-five seminars provide the opportunity for integration of clinical experience and didactic learning.

PEDI 3005 Pediatric Clerkship***
6 weeks 7.0 Semester Credit Hours
Department of Pediatrics
The pediatric clerkship is intended to introduce the student to the infant, child and adolescent as a developing and growing organism. The effects of developmental, psychosocial, and environmental factors on the child’s growth and health status are emphasized. Students spend variable lengths of time on inpatient teaching services, in the newborn nursery, and in various general and subspecialty outpatient clinics.

Students participate along with house staff in care of patients and are responsible for taking a history and doing a complete physical examination. After analyzing these data, the student is expected to establish a working diagnosis and to recommend appropriate laboratory studies and a course of management. Students also participate in house staff and attending rounds, grand rounds, and departmental conferences as well as student discussion groups.

The objectives of the clerkship are: (1) to provide students with an opportunity to gain skills and insight into the more unique features of history taking and physical examination performance in infants and children, (2) to provide students with an exposure to infants and children with both common minor illnesses and with serious and more unusual acute and chronic illnesses, (3) to impress students with the necessity to consider not only the infant or child patient, but the entire family constellation, its cultural background and socioeconomic status, (4) to give students the opportunity to participate in the diagnostic workup and treatment of infants and children, and (5) to encourage students to refer to appropriate textbooks and journal articles as they undertake the diagnostic workup and treatment of their assigned patients.

PSYC 3005 Psychiatry Clerkship***
6 weeks 7.0 Semester Credit Hours
Department of Psychiatry
The psychiatric clinical clerkship is designed to familiarize the student with the personality traits, illnesses, and emotional disturbances that affect health and productivity. It is an opportunity for the student to develop and strengthen clinical skills in interviewing patients, formulating treatment plans, and carrying out treatment with patients who have psychiatric illness. The clerkship is arranged so the student may select the assignment area on the basis of particular interest, i.e., an inpatient/outpatient setting. The student’s role in the clerkship is arranged to allow for considerable experience in the working relationship between patient and “physician” in the treatment process. Seminars have been developed to allow the student an in-depth appreciation of the various psychiatric states and emotional problems which affect the general practice of medicine. The student-staff ratio allows for small groups of students to meet with faculty, thereby enhancing learning. The clerkship is an opportunity for the students to look at their personal feelings and values and understand how they influence patient care, to learn how to deal with psychiatric disease, and to become more comfortable in dealing with the personalities of patients with organic disease.

SURG 3005 Surgery Clerkship***
12 weeks 14.0 Semester Credit Hours
Department of Surgery
The 12-week clerkship is divided into two 6-week rotations, one on general surgery and one on surgical specialties. Each of these rotations is then subdivided into two 3-week sessions with the general surgery rotation consisting of sessions on each of two different surgical services and the surgical specialties rotation including sessions on two different specialty services chosen electively from among seven surgical specialties.

During this surgical clerkship, the student is afforded the opportunity to participate actively in the diagnosis and therapy of patients suffering from both acute and chronic surgical illness including both ambulatory and bedridden patients. The clerkship is interwoven with teaching ward rounds, clinical conferences, symposia, and a reading program with weekly examination and reviews on all aspects of surgery and the surgical specialties.

The goals of the surgical clerkship are to provide students the opportunity to develop adequate knowledge, basic manual skills, and attitudes about surgical disease which should be encompassed by every practicing physician.

Senior Year
The fourth year of medical school is devoted to required didactics, required selectives, and electives. Didactics require five weeks; required selectives require 12 weeks; electives require 16 weeks. Eight weeks (optional) may be used for vacation or travel, making the senior year 41 weeks in length.

Required Didactic Courses
All of the courses below are included in the required didactic periods.

*** Successful completion of all required preclinical courses is prerequisite to enrollment in any of the clinical clerkships.
Mandatory Didactic Courses

**EMST 4100  Advanced Cardiac Life Support**
1.0 Semester Credit Hour
Department of Emergency Medical Technology
The focus of this course is the initial management of the cardiopulmonary-arrest patient including advanced airway management techniques, cardiovascular pharmacology, defibrillation, and arrhythmia analysis. The student must review the current AHA ACLS text prior to class. Successful completion results in an ACLS Provider Course Completion Card. Instruction presented satisfies guidelines published by the American Heart Association’s ECC for their ACLS core curriculum.

**MEDI 4155  Epidemiology**
1.5 Semester Credit Hours
Department of Medicine
An introduction to the concepts and methods of epidemiology is provided as a basis of preventive medicine. Fundamental concepts, relating to epidemiologic and clinical measurements, to relative risk, and to study design, including prevalence studies, case-control studies, incidence studies and clinical trials are presented in a lecture format. These principles are then illustrated in small-group exercises and computer-based exercises reflecting real-life epidemiologic problems.

**PATH 4290  Clinical Pathology**
2.5 Semester Credit Hours
Department of Pathology
A course designed to enable students to take medical laboratory information and data presented in preceding courses in the medical curriculum and to apply such information in a comprehensive and practical way to the clinical diagnosis and management of patients.

**INTD 4105  Medical Jurisprudence**
0.5 Semester Credit Hour
The course will center around the Texas Medical Practice Act and applicable federal laws.

**INTD 4106  On Becoming a Doctor**
0.5 Semester Credit Hour
The course is the capstone of the four-year longitudinal curriculum in humanities and ethics. The goals are to reflect upon a) physician’s values, attitudes, and their intersection with cultural values and attitudes; b) the historical and moral traditions of medicine in the context of society, politics, spirituality, and the health care system; and c) the personal identity of a doctor.

Elective Didactic Courses

**ANES 4101  Ethics Seminar Series**
0.5 Semester Credit Hour
The course is designed to help develop the students’ values, social perspectives, and interpersonal skills for the practice of medicine.

**FAPR 4100  Medical Economics - MS4**
0.5 Semester Credit Hour
The course is a presentation and discussion of current issues in health care delivery.
PATH 4103  Advanced Hematology  
0.5 Semester Credit Hour  
The course will provide students with the opportunity to gain a better understanding of the more commonly seen hematologic disorders.

PHYL 4100  Renal Physiology Update  
0.5 Semester Credit Hour  
This course will cover a review and update of functions of the human kidney. Students will participate in assisting the first-year medical students in the Physiology course.

PSYC 4104  Advanced Medical Spanish Seminar  
0.5 Semester Credit Hour  
Patient case vignettes will be presented and discussed in Spanish.

RADI 4101  Clinical Diagnostic Radiology: A Refresher Course  
0.5 Semester Credit Hour  
The course will be a refresher course in Clinical Diagnostic Radiology.

Fourth Year Selectives

Students are required to take a four-week selective in medicine, a four-week selective in a surgical discipline, and a four-week selective in either family practice, obstetrics/gynecology, pediatrics, or psychiatry.

Senior Electives

Sixteen weeks of the senior year are devoted to course work chosen by the student. Electives may be chosen from those approved by the Curriculum Review Committee and published each year in the Electives Brochure. The courses offered vary according to student demand, faculty capabilities, and time availability. The brochure describing electives is distributed each spring to third-year students to aid them in determining senior elective choices.

Some courses are full-time rotations while others are part-time. Students must register for at least 35 hours per week of course work. Each four-week period of elective work earns 4 semester hours of academic credit.

As an illustration of the kinds of courses which may be offered, titles of electives available in 2003–2004 are listed below:

Electives/Selectives

Anesthesiology
Clinical Anesthesiology
Critical Care Anesthesia
Anesthesiology Research
Obstetrical Anesthesia/Analgesia Management
Pain Management

Biochemistry
Biochemistry Research
(See current Electives brochure for areas of research.)

Cellular and Structural Biology
Anatomy of the Newborn

Regional Anatomy
Research in Molecular Neurobiology
Selected Research Projects
Advanced Anatomy of the Back, Head, and Neck
Advanced Anatomy of the Thorax, Abdomen, and Pelvis
Advanced Anatomy of the Pelvis and Lower Member
Cancer Cell Biology
Human Genetics Research
Advanced Anatomy of the Extremities
Molecular Immunological Research
Advanced Neuroanatomy
Molecular Endocrinology Research
Advanced Anatomy of the Trunk
Anatomy and Chronic Pain

Emergency Medicine
Emergency Medical Services — Ambulance
Family and Community Medicine
Family Health Care—Academic Faculty Practice
Family Health Care—Community Medical Associates Faculty
Selective in Medical Informatics
Community Health
Elective in Community Geriatrics
Environmental Medicine/Border Health
Research in Family Medicine
Preceptorship with Board-Certified Family Physicians
Elective Preceptorship in International Health
Sub-Internship on the Family Practice In-Patient Service
Cost Containment and Medical Practice
Office Procedures Elective
AHEC Clinical Experience
AHEC Preceptorship
Advanced Obstetrics and Gynecology
Essential Spanish for Health Care
Special Topics
Spanish-Speaking Only Patient Clinical Rotation

Medicine
Medicine Urgent Care Unit
Clinical Cardiology
Cardiovascular Research
Cardiology Consultation – WHMC
Cardiology Externship
Cardiology Service
Research in Calcium and Bone Metabolism
Clinical Dermatology
Clinical Endocrinology
Research in Clinical Epidemiology
Gastrointestinal Research
Clinical Gastroenterology
Gastroenterology
Gastroenterology Service
Clinical Hematology
Research in Hematology
Hematology Service
AHEC Clinic Experience
AHEC Preceptorship
Emergency Medicine Rotation
Clinical Preceptorship in General Internal Medicine
Medicine Sub-Internship
Medicine Externship in HIV/AIDS
Infectious Diseases
Research in Infectious Diseases
Clinical Infectious Diseases
Infectious Disease Service
Clinical Nephrology
Nephrology Service
Renal Research
Consultation Neurology
Neurology - WHMC
Neurology Extternship
Research Neurology
Oncology
Oncology Service
Molecular Genetics Research in Breast Cancer
Clinical Pharmacology
Coronary Intensive Care
Clinical Chest Disease
Medicine ICU
Pulmonary Disease
Pulmonary Medicine
Medical Emergency Care
Medical Externships
Clinical Rheumatology
Rheumatology
Clinical Nutrition
Research in General Internal Medicine
General Internal Medicine
Allergy-Immunology Clinic and Consultation Service
Hematology/Oncology Consultation and Ward
Medical Ethics for the Clinician
Medical Externship—ICU University Hospital
Geriatric Medicine
Research in Aging
EKG/Heart Sound Rotation
Preceptorship in Indian Health Care
EKG Elective
Senior Rotation in Antibiotic Management
Women’s Health

Microbiology
Basic Aspects of Immunology and Microbial Infections

Obstetrics and Gynecology
Advanced Sonography Elective
Clinical Obstetrics & Gynecology
Endo-Infertility Elective
Obstetrical Externship
Obstetrics and Gynecology Research
Women’s Reproductive Health and Gynecological Surgery

Ophthalmology
Clinical Ophthalmology
Research in Clinical Ophthalmology
Ophthalmonic Research

Orthopaedics
Selective in Adult Reconstruction in Orthopaedic Surgery
Selectives in Orthopaedics
Selective in Hand Surgery
Emergency Orthopaedics
Trauma and Fracture Care
Pediatric Orthopaedics - SRCH/University Hospital
Research in Orthopaedics
Primary Care in Orthopaedics
Preceptorship in Orthopaedics
Orthopaedic Oncology
Selective in Sports Medicine

Otolaryngology
Head and Neck Surgery
Otorhinolaryngology Research

Pathology
Hematology
Blood Banking
Hematology/Blood Banking
Anatomic Pathology
Molecular Diagnostics
Research in Pathology
Fine Needle Aspiration Technique and Basic Interpretation

Pediatrics
Pediatric Cardiology
Pediatric Hematology-Oncology Courses
Pediatric Infectious Disease
Pediatric Endocrinology
Pediatric Pulmonology
Neonatal Research
Neonatal Intensive Care Externship
Pediatric Genetics and Birth Defects
Pediatric Nephrology
Developmental Disabilities
Genetics and Birth Defects
Primary Ambulatory Care Preceptorship
AHEC Clinic Experience
AHEC Preceptorship

Pharmacology
Pharmacology Research
Clinical Pharmacology

Physiology
Mechanics of Metabolism of Skeletal Muscle in Aging and Disease
Research in Cardiovascular Physiology
Ion Channel Research in Excitable and Non-excitable Cells
Renal Physiology Update
Research in Molecular Endocrinology
Neural Mechanisms in the Regulation of the Circulatory System

Psychiatry
Clinical Psychiatry
Substance Abuse Treatment Program
Required Psychiatry
Clinical Biological Psychiatric Research
Neuropsychiatry
Psychotic Disorders
Child and Adolescent Psychiatry
Consultation-Liaison Selective

Radiation Oncology
Clinical Radiation Medicine

Radiology
General Diagnostic Radiology
Diagnostic Radiology Elective
Pediatric Radiology
Rehabilitation Medicine
Clinical Rehabilitation Medicine
Introduction to Inpatient Rehabilitation
Introduction to Pediatric Rehabilitation
Introduction to Spinal Cord Injury
Combination of four rehabilitations

Surgery
Senior Surgical Electives
Surgical Oncology Elective
Supervised Basic Science Research Elective
Emergency Clinical Surgery
Supervised Clinical Science Research Elective
General Surgery Selective - BAMC/Burn Unit
Affiliated Surgery Elective
Affiliated Surgery Selective - WHMC (required)
Elective in Thoracic Surgery
Elective in Oral and Maxillofacial Surgery
Pediatric Surgery (required)
Elective in Urology
Transplant Surgery Selective

Neurological Surgery
Elective in Plastic Surgery
General Thoracic Surgery and Thoracic Organ Transplantation
Clinical Anesthesiology
Critical Care Anesthesia
Obstetrical Anesthesiology/Analgesia Management
Pain Management
Clinical Ophthalmology
Elective in Hand Surgery
Emergency Orthopaedics
Elective in Orthopaedics
Elective in Orthopaedics Sports Medicine
Elective in Orthopaedics Oncology
Primary Care in Orthopaedics
Otolaryngology–Head and Neck Surgery
Senior Surgical Subinternship
Pediatric Surgery
Rural Surgery
Surgical Critical Care
Seniors Honors Program in Surgery
School of Allied Health Sciences

The School of Allied Health Sciences is a dynamic center of learning, service and research for those interested in being a part of the challenging health care industry. The vision of the faculty members in the School of Allied Health Sciences states that “we will improve the health of humanity, today and tomorrow, through excellence, visionary leadership and teamwork in education, research, service and patient care.”

The words “allied health” stand for the largest group of health care providers in the United States. According to the American Medical Association, there are 52 verifiable allied health disciplines. This diversity is inclusive and creates a large, powerful group of health care professionals. Collectively, allied health professionals are over 3 million people strong and constitute more than 60 percent of the entire health care workforce. In Texas, there are over 270,000 allied health professionals. In 2000-2001, there were 12,841 allied health students enrolled and 6,913 graduates from 363 different programs representing 42 different professions within the state.

The diversity of professions with “allied health” makes the term difficult to define. For the School of Allied Health Sciences, we describe allied health professionals as those who are involved in the identification, evaluation, treatment, and prevention of diseases, injuries, and conditions, while educating the public on prevention, wellness, and self-management for healthful lifestyles. Here at the School of Allied Health Sciences we provide educational programs in:

- Clinical Laboratory Sciences
- Deaf Education and Hearing Science
- Dental Hygiene
- Dental Laboratory Technology
- Emergency Medical Technology
- Occupational Therapy
- Physical Therapy
- Physician Assistant Studies
- Respiratory Care

We continually monitor the State’s requirements for allied health professionals and adapt our programs to meet emerging needs of new allied health professionals. Feel free to contact us if you are interested in a professional program that we do not offer currently, and we can refer you to the nearest program.

Allied health education takes place in many different educational institutions, including community colleges, four-year colleges and universities, comprehensive universities, hospitals, and health science centers. Each institution has educational programs that reflect the overall mission of that learning environment. Here at UTHSCSA, we do much more than prepare health care professionals to enter their chosen field – we aim to prepare professionals who will be the leaders, educators, and scholars in their disciplines. We provide the level of education that is not always available at other colleges and universities. Our 25-year history provides a strong foundation for faculty and students to expand beyond the expected.

For further information about School of Allied Health Sciences departments and educational programs, use the following telephone numbers and Web site addresses.

Dean’s Office (210) 567-8800
www.uthscsa.edu/sah/sah_main.html

Clinical Laboratory Sciences (210) 567-8860
www.uthscsa.edu/sah/cls/cls.html

Deaf Education and Hearing Science (210) 567-8800
www.sunshinecottage.org

Dental Hygiene (210) 567-8820
www.uthscsa.edu/sah/dh/index.html

Dental Laboratory Technology (210) 567-3056
www.uthscsa.edu/sah/dlt.html

Emergency Medical Technology (210) 567-7860
www.uthscsa.edu/sah/emt.html

Occupational Therapy (210) 567-8880
www.uthscsa.edu/sah/ot.html

Physical Therapy (210) 567-8750
www.uthscsa.edu/sah/pt.html

Physician Assistant Studies (210) 567-8810
www.uthscsa.edu/sah/PAStudies

Respiratory Care (210) 567-8850
www.uthscsa.edu/respiratorycare

Educational Programs

All certificate and degree programs offered through the School of Allied Health Sciences combine general education and prerequisite* courses in biological, physical, and social/behavioral sciences taken at accredited colleges or universities. Specific prerequisites vary by program and may be found in each department’s section of this Catalog.

Undergraduate Certificate Programs

Department of Dental Hygiene — The dental hygiene certificate program requires 31 semester credit hours of liberal arts prerequisites, followed by a professional phase that consists of 21 months of study at the University. The

* Prerequisite courses for entry into Allied Health bachelors and undergraduate certificate courses are subject to change pending review.
professional phase curriculum includes 60 semester credit hours and covers dental and clinical sciences, and the application of clinical skills.

**Department of Dental Laboratory Technology** — The 21-month dental technology certificate program combines classroom instruction with laboratory and practice experience opportunities. Requirements include 6 semester credit hours of liberal arts prerequisites and 67.5 semester credit hours of dental sciences in the professional phase curriculum at UTHSCSA.

**Department of Emergency Medical Technology** — Certificate programs for EMT-Basic and EMT-Paramedic are offered through the Department of Emergency Medical Technology. The complete certificate program curriculum is the entry level into the profession and consists of 35 semester credit hours. Students who complete each level of the certificate curriculum are eligible to take state or national certification examinations. Students in the EMT-Basic program must be at least 18 years old and hold a high school diploma or GED. Admission into the Paramedic program requires certification in the previous level.

**Degree and Post-Baccalaureate Certificate Programs**

**Department of Clinical Laboratory Sciences** — Bachelor of Science students in Clinical Laboratory Sciences may earn their degree from UTHSCSA or through a joint degree program from both UTHSCSA and The University of Texas at San Antonio (UTSA). For further information about the joint degree program, see the department's section of this Catalog and the Undergraduate Catalog of UTSA. Prerequisites for the program include general education, basic science, and upper-level science courses that may be taken at accredited community colleges or four-year universities. Generally, upper-level science courses must be taken at a four-year institution. Three tracks are available for Bachelor’s degree students: General, Pre-medical, and Business. The tracks differ in science, mathematics, and general education prerequisites, but the professional phase coursework is the same. The General and Business tracks generally require a minimum of 139 semester credit hours, and the Pre-medical track requires a minimum of 150 semester credit hours. Of these totals, 62.5 hours are included in the professional phase curriculum.

The Department of Clinical Laboratory Sciences offers a post-baccalaureate certificate program for students who already hold a Bachelor’s degree from an accredited institution. Science requirements not completed as a part of the Bachelor’s degree may be taken as a part of the certificate curriculum. The curriculum requires approximately 18 to 24 months to complete, depending on when the student enters the program. Students may begin classes in the fall or spring semester.

The department also offers programs in cytogenetics and molecular diagnostics. Students may earn a Bachelor’s degree or a post-baccalaureate certificate in these programs. All prerequisites must be completed before enrolling. Students who already hold a Bachelor’s degree in a natural or physical science may enroll in the post-baccalaureate certificate program in cytogenetics or molecular diagnostics. Full-time students may complete the program in one year.

Categorical certificate programs in a subdiscipline of clinical laboratory sciences are offered for students with a Bachelor’s degree in biology, chemistry, or other closely-related discipline. Categorical certificates are available in microbiology, clinical chemistry, immunohematology, and hematology. Curricula for these programs can be completed in 12 to 18 months, based on part-time enrollment.

The Master of Science degree in Clinical Laboratory Sciences is a graduate degree administered by the Graduate School of Biomedical Sciences. For further information, see the Department of Clinical Laboratory Sciences section of this Catalog. Students in the program follow procedures and policies of the Graduate School.

**Department of Dental Hygiene** — The Department of Dental Hygiene offers an entry-level Bachelor’s degree and a post-certificate (degree completion) Bachelor’s degree. The entry-level BS degree consists of two academic years of full-time study for a total of 69 semester credit hours in dental hygiene. Students complete 60 hours of dental hygiene entry-level course and 9 semester hours of advanced dental hygiene courses to complete the dental hygiene undergraduate major. Students wishing to achieve the entry-level BS degree must have completed all of the prerequisite general education courses (55 semester hours) before matriculation into the program. The post-certificate degree completion BS program is available to graduates of the UTHSCSA Certificate program and other dental hygiene entry-level programs in Texas and the U.S. Registered Dental Hygienists who are not graduates of the UTHSCSA entry-level program will be required to take a minimum of 30 semester credit hours on the UTHSCSA campus. Earning a Baccalaureate Degree provides the graduate with multiple career options, including private practice, education, administration, public health, business, and research. Both of the BS programs require a total of 124 credit hours to graduate, including 55 hours of specified general education prerequisites, entry-level, and advanced dental hygiene major courses.

The Master of Science degree in Dental Hygiene is a graduate degree administered by the Graduate School of Biomedical Sciences. For further information, see the Department of Dental Hygiene section of this Catalog. Students in the program follow procedures and policies of the Graduate School.

**Department of Dental Laboratory Technology** — The Bachelor of Science degree in Dental Laboratory Sciences is designed for the individual with a background in dental laboratory technology who wishes to gain education and experience in advanced techniques, laboratory management, business and training skills, and professional communications. The program requires
a total of 91.5 semester credit hours in prerequisites, including 51 hours in general education, 25.5 hours in dental laboratory requirements, and 15 hours in business. The professional phase of the program includes 46 semester credit hours, offered over two years during fall and spring semesters.

**Department of Emergency Medical Technology** — The Bachelor of Science in Emergency Health Sciences degree program, offered by the Department of Emergency Medical Technology, is designed for certified paramedics who wish to extend their education in the areas of pre-hospital emergency medical technology, emergency medical care administration, teaching, or advanced level practice. The program requires 72 semester credit hours of prerequisites in general education, sciences, and emergency medical technology (certificate level coursework). An additional 51 semester credit hours of coursework complete the Bachelor’s degree program.

**Department of Occupational Therapy** — The Master of Occupational Therapy, an entry-level professional degree program, requires 89 semester credit hours of prerequisites in general education and science courses that can be taken at any accredited college or university. The professional phase of the program at UTHSCSA is a 2 1/2-year program that consists of 105–110 semester credit hours, including 20 semester credit hours (6 months) of full-time clinical fieldwork. Graduates of the program are eligible to take the national certification examination administered by the National Board for Certification in Occupation Therapy and to apply for licensure, which is required for practice in most states. A BS to MOT Advanced Transfer option is offered for Occupational Therapists who have a Bachelor’s Degree. Students complete an additional 36 semester graduate credits. Students may attend part time or full time.

**Deaf Education and Hearing Science** — The Master of Deaf Education and Hearing Science degree is a graduate level course of study designed for professionals with a background in education, speech pathology, nursing, and other service-related fields. The objective of the program is to prepare those professionals to utilize auditory/oral techniques teaching children with hearing loss.

The degree program consists of 36 semester hours to be completed in six semesters. To accommodate working professionals, classes are offered in the evenings and during summers, with some classes using Web-based instruction methods. Observations, demonstrations, seminars, and teaching apprenticeships are scheduled throughout the six semesters.

**Department of Physical Therapy** — The Master of Physical Therapy, an entry-level professional degree program, requires 70–90 semester credit hours of prerequisites in general education and/or science courses that can be taken at any accredited college or university. The professional phase of the program at UTHSCSA is a 30-month program that consists of 100 semester credit hours, including 24 weeks of full-time clinical experiences. Additional clinical experiences may be included on an elective basis.

**Department of Physician Assistant Studies** — The Master of Physician Assistant Studies degree is designed to prepare physician assistants who will practice in primary care settings in rural and medically underserved areas. The program requires 90 semester credit hours of general education and science prerequisites completed at accredited colleges and universities. The 33-month professional phase of the program consists of 21 months of coursework at UTHSCSA and other academic facilities in San Antonio, and 12 months of supervised clinical practice at various settings in South Texas.

**Department of Respiratory Care** — The Bachelor of Science degree in Respiratory Care requires 59 semester credit hours of general education and pre-professional coursework that may be completed at accredited colleges and universities. The two-year professional phase of the program consists of 91.5 semester credit hours of science and clinical courses, including over 1000 hours of in-hospital clinical practice. Graduates are eligible to take the national board examinations in respiratory care as well as state licensure.

The Department of Respiratory Care has requested approval to offer a post-baccalaureate Advanced Certificate in Respiratory Care and a Master of Science degree in Respiratory Care. If approved, these two new programs will be offered beginning in 2004.

**Laredo Campus Extension**

The School of Allied Health Sciences offers two of its degree programs in Laredo as part of the Laredo Campus Extension: Bachelor of Science in Respiratory Care and Master of Occupational Therapy. Most of the coursework is provided through distance learning and Web-based courses. Educational partnerships with Laredo Community College and Texas A&M International University allow students to complete general education and prerequisite courses in preparation for admission to the professional curriculum. Laredo area hospitals and health agencies provide excellent sites for clinical education.

The **Occupational Therapy** program in Laredo is a part-time career-bridge to the MOT degree program designed for individuals who have completed an Associates Degree program as an Occupational Therapy Assistant.

The **Respiratory Care** baccalaureate degree program offered in Laredo is designed to prepare individuals to become advanced level respiratory therapists. Students who completed the program prerequisites may begin their respiratory care course work in their junior year. An advanced standing, career-ladder option is available for individuals who have already completed an Associates Degree in Respiratory Care or who hold the certified (CRT) or registered respiratory therapist (RRT) credentials. The regular and advanced standing programs are identical to those being offered in San Antonio.
Advancement, Probation, Dismissal

Decisions about advancement, probation, and dismissal may be made on the basis of academic performance and professional behaviors. Academic standards for advancement in the certificate or degree program are determined by each department’s Committee on Allied Health Studies (CAHS). Failure to meet the standards may result in the student’s being placed on probation or dismissal from the program.

Students who do not adhere to professional behavior standards may be dismissed from the certificate or degree program. General standards for professional behavior are provided in the School of Allied Health Sciences section of the Student Guide. Other standards and policies may be set by the CAHS. In addition, professional behavior and ethics standards from professional organizations may be applied.

When the CAHS determines that a student’s violation of professional behavior standards or ethics does not merit dismissal, the student may be placed on probation. While on probation, the student is expected to exhibit specified professional behaviors in order to continue in the program. Expectations are defined in writing by the CAHS on a case-by-case basis, depending on the specific behaviors the student must correct. Should there be further violations of standards, the student may be subject to immediate review and possible dismissal from the program. Policies and procedure regarding probation, dismissal, and student appeals may be found in the Student Guide.

Students may be dismissed, suspended, or refused readmission at any time if circumstances of a legal, moral, health, social, or academic nature are considered to justify such action.

Appeal of Academic and/or Professional Conduct

The Committee on Allied Health Studies (CAHS) provides students and faculty with an objective appraisal of questions of an academic nature such as an individual grade, evaluation of clinic proficiencies, satisfactory completion of projects, etc., or questions of professional conduct and behavior.

Copies of “Procedure for Appeal of Academic and/or Professional Conduct” are available in the office of each department chair, and the policy is printed in the Student Guide.

Questions of scholastic dishonesty and other infractions of the Rules and Regulations of the Board of Regents of The University of Texas System or the “Procedures and Regulations Concerning Student Conduct and Discipline of the Health Science Center” are not considered by the CAHS.

Withdrawal

Permission for withdrawal from a certificate or degree program in the School of Allied Health Sciences may be granted by the Dean or Associate Dean upon the concurrence of the Committee on Allied Health Studies (CAHS). The student who wishes to withdraw must complete the Administrative Clearance Form, submit the form for the required signatures, and obtain authorized signature clearance from each area listed on the lower portion of the form. Before leaving the program, the student will arrange for an exit interview with the Associate Dean.

In the case of withdrawal before the end of the academic semester or session, the grading symbol WP or WF will be recorded for each course not completed, depending on the student’s standing on the last day of enrollment. In the case of withdrawal at the end of the academic semester or session, the appropriate grading symbol will be recorded for each completed course.

An application for readmission by a student who has previously withdrawn from a certificate or degree program is subject to the same requirements, procedures, and acceptance considerations that apply to first-time applicants.

Leave of Absence

Permission for a leave of absence from an Allied Health Sciences certificate or degree program, not to exceed one year, may be granted by the Dean or Associate Dean on the recommendation of the Committee on Allied Health Studies (CAHS). Permission may be granted only for extenuating circumstances, and indicates that the student will be allowed to return to the program within the one-year time limit.

The student’s request for a leave of absence must be made in writing to the Chair of the CAHS. The request should include the reasons for the request and the expected time of return to the program. The CAHS will recommend that the Dean or Associate Dean grant or deny the request. If permission is granted, the student will be notified in writing by the Associate Dean. The student is responsible for completing the Administrative Clearance Form, submitting the form for the required signatures, and obtaining authorized signature clearance from each area listed on the lower portion of the form. Before leaving the program, the student will arrange for an exit interview with the Associate Dean.

If the student begins the leave of absence before the end of the academic semester or session, the symbol I (Incomplete) will be recorded for each course that has not been completed, and the student will be required to complete such courses under conditions specified by the CAHS.

Specific procedures pertaining to leave of absence requests vary among departments in the School of Allied Health Sciences and may be found in each department’s section of this Catalog.

For further information about Laredo Campus Extension programs, contact the Allied Health Admissions Office at (210) 567-2660.
Grading

The standing of students in their work is expressed by the following grades:

- A = Excellent
- B = Above Average
- C = Average
- D = Below Average
- F = Failure

Grades for courses in which performance is graded an S (satisfactory) or U (unsatisfactory) are not used in computing the grade point average.

Although a grade of D may be earned in a required Allied Health Sciences course, certain courses in the curriculum must be completed with a grade of C or higher in order for the student to progress in the program. Those courses in which a D is not an acceptable grade are specified in each program description.

The grade point average is calculated using the following grade points:

- A = 4 points
- B = 3 points
- C = 2 points
- D = 1 point
- F = 0 points

The symbol I (incomplete) may be recorded for a student who has not completed class and/or laboratory assignments at the conclusion of the course. Incomplete work must be made up within the time specified by the Committee on Allied Health Studies of the program or the I will be replaced with a grade of F, and the course must be repeated for credit. When an I is issued pending a grade in a course which is a prerequisite for another course, the I must be removed before the student is allowed to enroll in the next sequential course.

Other symbols used to report students’ standing in their classes include: WP and WF (see “General Academic Policies”) and Q (course dropped—no penalty). The Q is recorded when the course is dropped before the first examination or graded assignment.

An interim grade of SP (Satisfactory Progress) or UP (Unsatisfactory Progress) may be assigned for clinical experience courses at the end of a grading period if a student fails to meet the established criteria for the clinical experience, and if the opportunity exists for the student to correct the deficit in a subsequent clinical rotation or affiliation. The SP is used to indicate that the student’s performance is satisfactory on accepted skills but below the minimum requirements, due to exceptional circumstances beyond the control of the student or clinic. The UP indicates that the student’s performance is below minimum requirements due to skill deficiency which is not related to exceptional circumstances. The criteria for converting an SP or UP to a final grade and the time limit for meeting that criteria will be determined by the course director, using clinical documentation and consultation with the clinical supervisor. (If the student is required to complete an additional affiliation or other remedial work, the curriculum may be extended beyond the expected graduation date.)

In some programs, students have the option of seeking exemption from certain courses in the curriculum if they have successfully completed an equivalent course in the curriculum at another college or university or content in an examination. The symbol CR (Credit) is recorded for a course(s) for which the student has been exempted.

Course Drop/Withdrawal

Courses dropped during the first two weeks of a fall or spring semester or during the first week of a summer semester will be recorded as a Q.

From the beginning of the third week to the end of the eleventh week of classes, a student may withdraw from a course and receive a W (Withdraw) on her or his transcript. Students who wish to withdraw must meet with their faculty advisor and the course instructor, fill out the course withdrawal form, and obtain necessary signatures.

Between the end of the eleventh week and the last day of class before finals, students who wish to withdraw from a course must petition the Committee on Allied Health Studies (CAHS) through a written request to the course instructor. The petition must state why the student is unable to continue in the course. Acceptable reasons for withdrawal do not include dissatisfaction with the instructor or course or with the expected grade or performance. The CAHS will approve or deny the request. If approved, the student will receive a WP (Withdrawal Passing) or WF (Withdrawal Failing). A W will be assigned if the instructor has no evidence upon which to base a WP or WF symbol. If the request is denied, the instructor will assign a final grade in accordance with the criteria that is applied to other students in the course.

Assigned symbols of W, WP, WF, or Q will not enter into the computation of the student’s grade point average.

The instructor may recommend to the Department Chair that a student be administratively dropped from a course when the instructor can show that circumstances warrant such action. The Dean must approve this request. The student will receive WP if the student was passing or a WF if the student was failing at the time of the drop. If there was no evidence that a student was passing or failing, a W will be assigned.

Dean’s Honor List

Students in certificate or Bachelor’s degree programs in the School of Allied Health Sciences with a grade point average (GPA) of 3.5 or greater for an academic semester or session may qualify for inclusion on the Dean’s Honor List. In addition to the minimum GPA, Dean’s Honor students must complete at least 9 semester credit hours
during a regular semester or 5 semester credit hours during a summer session. Grade point averages for Clinical Laboratory Science students who are enrolled concurrently at The University of Texas at San Antonio are calculated as a combination GPA.

Registration for Audit
Permission to audit a course or courses in the School of Allied Health Sciences is sometimes granted. Auditing conveys only the privilege of observing and excludes handing in papers or taking part in class discussion, laboratory exercises, or fieldwork. No grade is given and no credit is recorded. Students must obtain permission to audit a course from the instructor of the course and the Department Chair of the program in which they are enrolled.

Admission as a Special Student
An individual who wishes to enroll in courses offered by the School of Allied Health Sciences without entering a certificate or degree program must apply for admission as a non-degree, or special, student. In general, a special student will have an academic background similar to those ordinarily admitted to Allied Health Sciences programs: course prerequisites and minimum grade point averages (GPA) are generally consistent with the published admissions criteria for each program. Permission to enroll as a special student may be granted by the Dean, Associate Dean, or Department Chair. Special students will be enrolled only if space is available.

Students seeking “special student” status must receive approval for registration each semester by the Dean, Associate Dean, or Department Chair and the instructor of each course; must maintain a minimum grade point average consistent with the department’s established policies for regular students; and enroll for no more than 9 semester credit hours during fall or spring semesters or 6 hours during the summer session.

Course grading policies and standards for special students are the same as those for regular students. All grades received as a special student will be included on the student’s transcript and used for computing the cumulative GPA if the student is subsequently admitted to a certificate or degree program. Under special circumstances, such as the computation of the GPA to determine academic probation, the Dean or Associate Dean may grant exceptions to this policy.

Readmission
Although the University is under no obligation to readmit any student who has withdrawn or has been dismissed, a student may seek readmission for further study by petitioning the Committee on Allied Health Studies. Whether readmission will be considered at the entry level or an advanced level will be determined on an individual basis. All such requests will be considered by the Allied Health Faculty Council and, according to the recommendation of the Council, will be approved or disapproved by the Dean.

Graduation with Honors
Honors designations are awarded to students graduating from the baccalaureate programs based upon the following scale:

- **Magna Cum Laude** — Cumulative GPA of 3.50–3.74.
- **Summa Cum Laude** — Cumulative GPA of 3.75–4.0

Graduates of the certificate programs in Dental Hygiene and Dental Laboratory Technology with a cumulative GPA of 3.5 or better will be awarded the certificate “With Honors.”

Scholarship Information
One competitive scholarship, the Benny Shreck Scholarship, in the amounts of $500–$1000 may be awarded to one or more students each year, depending on fund availability. To compete for the scholarship, the student must be in good academic standing and submit a two-page essay on a topic determined by the Scholarship Selection Committee. This committee evaluates the academic status of each applicant (GPA), financial need as determined by the Office of Financial Aid, and the essay.

Allied Health Sciences has “noncompetitive” scholarships via the Dorothy B. Banks Charitable Trust. These $1,000 scholarships are awarded to students based on financial need and academic scholarship, with some consideration for prior residence in a medically underserved area of Texas.

Credit by Examination
Students in some Allied Health Sciences certificate or degree programs may attempt to earn credit by examination for designated courses. Credit by examination will not be given for credit-bearing courses that the student previously passed or failed at UTHSCSA or any other college or university.

Academic credit is awarded only to officially enrolled students or former students. Additional eligibility requirements may be established by each department, with the approval of the Dean. Information about additional requirements is available from the department office or the Registrar.

Credit by examination satisfies degree requirements in the same way as credit earned by passing a course. Credit earned by examination does not jeopardize eligibility for scholarships that require a certain class standing (e.g., Junior class).
A student may be eligible for credit by examination by passing the examination according to criteria set by the department that administers it. Credit by examination is reported to the Registrar only when the student requests that the department report to the Registrar that the examination was passed. At the department’s request, the Registrar will post the credit earned by examination on the student’s official transcript. Credits earned by examination are not included in the calculation of the student’s grade point average.

The student’s official transcript does not reflect unsuccessful attempts to earn credit by examination. If a student fails a test for credit by examination, the student may earn credit for the course only by enrolling and taking the course.

All tests administered for credit by examination require the payment of a fee, determined by the department and the Registrar. Fees must be paid before the test is administered. Fees vary, depending on the nature of the test, time required for administration, and other factors.

### College Level Examination Program (CLEP) Policy

#### Policy Statement

Course credit for specified general education and elective prerequisites may be accepted without a letter grade in School of Allied Health Sciences professional certificate and degree programs if a student earns a satisfactory score on College Level Examination Program (CLEP) examinations.

#### Conditions and Limitations

- Applicants and students are responsible for requesting that official CLEP scores be sent by The College Board to the Registrar.
- CLEP credit awarded by another institution is acceptable if scores are consistent with the minimum scores listed in the tables below. Notation of CLEP credit on an official transcript from the institution is sufficient documentation.
- CLEP credit cannot be used to establish credit for prerequisite courses for which a grade of “F” had been recorded.
- CLEP credit will not be recognized for prerequisite courses in which the student received college credit for the same course or its equivalent.
- Credit for CLEP exams used to satisfy requirements for entry into a program will not be listed on The University of Texas Health Science Center at San Antonio transcript.

#### Implementation

This policy took effect on May 1, 2003.

### Prerequisite courses that may be satisfied by CLEP examinations

<table>
<thead>
<tr>
<th>Prerequisite Course</th>
<th>CLEP Examination</th>
<th>Minimum Score/*</th>
<th>Maximum Credit Granted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounting</td>
<td>• Principles of Accounting</td>
<td>50/47</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>• Chemistry</td>
<td>50/46</td>
<td>3</td>
</tr>
<tr>
<td>Chemistry (Lecture)</td>
<td>• College Algebra</td>
<td>50/46</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>• College Algebra-Trig.</td>
<td>50/45</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>• Calculus</td>
<td>50/41</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>• Trigonometry</td>
<td>50/50</td>
<td>3</td>
</tr>
<tr>
<td>Computer Literacy</td>
<td>• Information Systems and Computer Applications</td>
<td>50/52</td>
<td>3</td>
</tr>
<tr>
<td>Developmental</td>
<td>• Human Growth and Dev.</td>
<td>50/45</td>
<td>3</td>
</tr>
<tr>
<td>Psychology</td>
<td>• Prin of Macroeconomics</td>
<td>50/44</td>
<td>3</td>
</tr>
<tr>
<td>Economics</td>
<td>• Prin of Microeconomics</td>
<td>50/41</td>
<td>3</td>
</tr>
<tr>
<td>English</td>
<td>• English Literature</td>
<td>50/46</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>• English Composition</td>
<td>50/420</td>
<td>3</td>
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<tr>
<td></td>
<td>• American Literature</td>
<td>50/46</td>
<td>3</td>
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<td></td>
<td>• Analyzing and Interpreting Lit.</td>
<td>50/47</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>• English Composition</td>
<td>50/420</td>
<td>3</td>
</tr>
<tr>
<td>English Composition</td>
<td>• Biology</td>
<td>50/46</td>
<td>5</td>
</tr>
<tr>
<td>General Biology</td>
<td>• Principles of Management</td>
<td>50/46</td>
<td>3</td>
</tr>
<tr>
<td>(Lecture &amp; Lab)</td>
<td>• Introductory Psychology</td>
<td>50/47</td>
<td>3</td>
</tr>
<tr>
<td>Introduction to</td>
<td>• Introductory Sociology</td>
<td>50/47</td>
<td>3</td>
</tr>
<tr>
<td>Business Admin.</td>
<td>• Marketing</td>
<td>50/50</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>• American Government</td>
<td>50/47</td>
<td>3</td>
</tr>
<tr>
<td>Marketing</td>
<td>• U. S. History I</td>
<td>50/47</td>
<td>3</td>
</tr>
<tr>
<td>United States</td>
<td>• U. S. History II</td>
<td>50/46</td>
<td>3</td>
</tr>
<tr>
<td>Government</td>
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<tr>
<td>United States</td>
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<tr>
<td>History</td>
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</tbody>
</table>

* Minimum scores listed are recommended by American Council on Education standard-setting panels for the paper-and-pencil version of the CLEP administered before July 1, 2001.
CLINICAL LABORATORY SCIENCES

One of the most dynamic of all health care professions, clinical laboratory science (CLS) is the study and practice of diagnostic medicine. Clinical Laboratory Scientists (CLS) are laboratory practitioners who analyze blood, urine, tissue, or other body specimens to provide critical data for disease diagnosis, treatment planning, and preventive health care. CLS seldom have contact with patients because they work more closely with physicians, researchers, and other health care professionals in disease investigation, consultation, and interpretation of laboratory results.

The Clinical Laboratory Sciences and Cytogenetics programs are fully accredited or approved by The National Accrediting Agency for Clinical Laboratory Sciences, 8410 West Bryn Mawr Avenue, Suite 670, Chicago, IL 60631-3415, (312) 714-8880; e-mail address: naacls@gnn.com; Web site: http://www.nacls.org.

Education Programs in Clinical Laboratory Sciences

The Department of Clinical Laboratory Sciences offers both undergraduate and graduate programs. These programs include undergraduate programs and post-baccalaureate certificates in clinical laboratory sciences, cytogenetics, and molecular diagnostics; and graduate programs in forensic/analytical toxicology and immunohematology. The Applicant Viewbook of the School of Allied Health Sciences provides detailed information about admission and application to any of these programs and a description of admission requirements to the Graduate School of Biomedical Sciences. The essential functions for this program are available upon request.

Undergraduate Program in Clinical Laboratory Sciences

The undergraduate program in Clinical Laboratory Sciences at UTHSCSA leads to the Bachelor of Science degree in Clinical Laboratory Sciences. This is an integrated four-year program which combines lower-division general education, basic science, and level one clinical laboratory science courses throughout the first three years. Students may enroll in clinical laboratory science courses as early as the freshman year in order to determine their interest in the field and their aptitude for a career in clinical laboratory sciences. Level two clinical laboratory science courses and clinical practicums comprise the final year of the program.

In the BS degree program, there are several CLS tracks or options the student may choose to pursue: a general, premedical school, or business.

The Department of Clinical Laboratory Sciences also offers post-baccalaureate certificates in clinical laboratory sciences, and categorical certificates in microbiology, clinical chemistry, immunohematology, and hematology. Individuals who successfully complete a baccalaureate degree or post-baccalaureate certificate in clinical laboratory sciences are eligible to take the national certification examinations given by the National Credentialing Agency (NCA) or the American Society of Clinical Pathologists.

Upon completion of the baccalaureate degree, graduates may find employment opportunities in hospital laboratories as well as private, reference, research, industrial, biotechnology, and pharmaceutical laboratories. With advanced education, the clinical laboratory scientist has additional career options including research, teaching, and management.

Application and Admission

Information about admission and application to the program in Clinical Laboratory Science is detailed in the Applicant Viewbook of the School of Allied Health Sciences. Admission requirements for baccalaureate and post-baccalaureate certificate programs include an overall grade point average (GPA) of 2.5 (out of a possible 4.0), 30 semester credit hours of college-level work, good standing at all universities/colleges attended, and two completed reference forms from former instructors, preferably science instructors. For those applicants meeting the minimum requirements, acceptance is on a competitive basis. The application files of prospective students are reviewed as received, but must be completed by May 1 to be considered for fall admission and October 1 for spring admission.

International applicants who have completed part or all of their education at schools outside of the U.S. must:

a) submit their foreign transcripts for a course-by-course descriptive evaluation through a university-approved evaluation service, and

b) have a minimum score of 213 on the computer-administered, or 550 on the written Test of English as a Foreign Language (TOEFL).

Degree and Post-baccalaureate Certificate Options

Students pursuing the Bachelor of Science degree in Clinical Laboratory Sciences may earn their degree from UTHSCSA or throughler joint degree program from both UTHSCSA and The University of Texas at San Antonio (UTSA).

UTHSCSA Bachelor of Science Degree

UTHSCSA offers a Bachelor of Science in Clinical Laboratory Sciences. The general education and basic science courses can be taken at any community college or
four-year university; the upper-level science courses including biochemistry, immunology, and general microbiology must be taken at a four-year institution. Generally, all professional clinical laboratory science courses are taken at UTHSCSA.

**Joint UTHSCSA/UTSA**  
**Bachelor of Science Degree**

Students interested in the joint degree must apply to UTSA for admission, complete 30 or more semester hours at UTSA, and complete UTSA general education requirements in addition to the UTHSCSA clinical laboratory sciences courses.

**UTHSCSA/Laredo Campus Extension Program**

This program is designed for clinical laboratory technicians (CLT)/medical laboratory technicians (MLT) who have earned an associate’s degree and who are certified as CLTs/MLTs by the National Credentialing Agency or American Society of Clinical Pathologists. UTHSCSA has an agreement with Laredo Junior College (LCC) and Texas A&M International University (TAMIU) that allows students to complete all general education and program prerequisites in Laredo. Advanced professional CLS courses are offered by UTHSCSA via distance learning in Laredo. Students who successfully complete this program of study will receive a Bachelor of Science degree from UTHSCSA. Students must apply and be accepted into the CLS Program at UTHSCSA.

**Post-baccalaureate Certificate**

The post-baccalaureate certificate program in Clinical Laboratory Sciences is designed for students who hold a bachelor’s degree from an accredited institution. The curriculum includes 62.5 hours of professional clinical laboratory sciences coursework. Science requirements not completed as a part of the bachelor’s degree may be taken as a part of the certificate curriculum. The curriculum requires approximately 18–24 months to complete, depending on when the student enters the program. Certificate students may begin classes in the fall or spring semester.

**Post-baccalaureate Categorical Certificate**

This certificate is designed for individuals who hold a baccalaureate degree in biology, chemistry, or other closely related discipline who would like to obtain a certificate in Clinical Laboratory Sciences in a specific subdiscipline. Categorical certificates in microbiology, clinical chemistry, immunochemistry, and hematology are available. Students can complete the categorical certificate requirements in 12–18 months, based on part-time enrollment.

Interested persons may call the Department of Clinical Laboratory Sciences for more information and a copy of the categorical certificate program curriculum.

**Advancement**

Advancement in the Clinical Laboratory Sciences program requires that the student complete scheduled program requirements each semester with a minimum grade of C in all basic science and clinical laboratory science courses and maintain a minimum cumulative grade point average of 2.5. Before clinical practicums begin in the senior year, the student must remediate D or F grades. Failure to remediate to a grade of C or better after repeating the course will result in the student’s forfeiting her or his position in the program. If there is not sufficient time for the student to remove deficiencies before clinical practicums are scheduled to begin, postponement of the clinical practicums or administrative withdrawal from the program may result.

**Advancement to the Senior Year**

A student must have an overall grade point average of 2.5 and no grade lower than a C in required science or clinical laboratory sciences courses to begin the senior year and enter clinical practicums. In addition, an Intent to Enroll in Clinical Practicum form must be filed with the program office at least two semesters before practicums begin. At this time the student’s file will be reviewed for advancement and a letter will be sent to the student indicating results of the review.

Students who are ready for clinical practicum are scheduled to rotate at different clinical sites in metropolitan San Antonio and at other sites in South Texas. South Texas sites are located in Brownsville, Eagle Pass, Uvalde, Del Rio, Laredo, and other South Texas facilities.

**Probation**

A student who fails to meet specified requirements and/or conditions imposed at the time of her/his acceptance will be placed on academic probation. A student who earns a D or F will be placed on academic probation until the grade is remediated. A second D or F in a CLS course will result in review and probable administrative withdrawal. During the senior year, the student must not earn a grade lower than C. If a student receives a D or F in a senior level lecture course, the student may not be permitted to enroll in practicums and will be placed on probation. Should remediation require that the student retake the course when it is offered the following year, graduation will be delayed. Any student receiving a combination of two Ds or Fs in senior course work will be administratively withdrawn from the program.
Placement Examinations and Updating Coursework

Individuals who have certification as a CLT or MLT and who have graduated from an accredited CLT/MLT program with an associates degree are awarded credits for equivalent level one clinical laboratory professional courses. Placement examinations may be given to determine areas of strengths and weaknesses. These individuals may also enroll in senior-level Web-based courses.

Students who have completed science or clinical laboratory science coursework more than seven years before enrolling in the program must consult with the Department Chair about updating knowledge and skills in these areas.

Schedule Planning

Students must be advised each semester before permission is given to enroll in UTHSCSA CLS professional courses. Sequencing and completion of specific courses are important if all lower-division work is to be accomplished during the freshman and sophomore years. Individuals with few or no college credits who are interested in the CLS program may apply for undergraduate admission to The University of Texas at San Antonio (UTSA) as a clinical laboratory sciences major.

Individuals who will be completing lower-division work at a college or university other than UTSA are advised to seek counseling about coursework which will fulfill program requirements well in advance of applying to UTHSCSA. An agreement for transferable coursework exists with San Antonio College (SAC), Palo Alto College (PAC), Northwest Vista College (NVC), University of the Incarnate Word (UIW), St. Philip’s College (SPC), Austin Community College (ACC), and Southwest Texas Junior College (STJC).

Estimated Program Expenses

Total costs for tuition and fees, health and liability insurance, parking permit, books, supplies, examination fees, etc., are approximately $9100 for the Bachelor of Science program, $5600 for the Cytogenetics Bachelor of Science or certificate programs, and $6100 for the Master of Science program. In addition, costs for other expenses, such as textbooks, course manuals, equipment, uniforms or scrubs, examination fees, and supplies, are approximately $1500 for the Bachelor of Science program, $900 for the Cytogenetics programs, and $300 for the Master of Science program.

Travel and living expenses for local and out-of-town clinical experiences are not included in this estimate. Nonresident students are subject to additional tuition costs, found under “Financial Information” in this Catalog.

Certification for Clinical Laboratory Scientists

Students who successfully complete a certificate or degree in Clinical Laboratory Sciences are eligible to take the national certification examinations given by the National Credentialing Agency (NCA) or the American Society for Clinical Pathology (ASCP).

Curriculum for the Undergraduate and Post-baccalaureate Certificate Programs

UTHSCSA General Education Requirements

For all track options, students seeking a UTHSCSA baccalaureate degree must complete courses from the following list:

<table>
<thead>
<tr>
<th>Credit Hours</th>
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<tbody>
<tr>
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<tr>
<td>6.0</td>
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<td>9.0</td>
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</tbody>
</table>

UTSA General Education Requirements*

The University of Texas at San Antonio requires 42 hours of general education requirements for all graduates. Students pursuing the joint degree must satisfy these requirements by completing courses in the following categories:

<table>
<thead>
<tr>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>6.0</td>
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<tr>
<td>3.0</td>
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<td>6.0</td>
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Science Requirements with UTSA Equivalents

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* See “UTSA General Education Requirements” listing in the current UTSA Catalog.
* Program prerequisites fulfill these requirements.
<table>
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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>CHE 1303,1312</td>
<td>General Chemistry II and Lab</td>
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<tr>
<td>CHE 2203,2242</td>
<td>Organic Chemistry and Lab</td>
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**General Education, Science, and Math Requirements with LCC/TAMIU Equivalents**

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<td>MATH 1342</td>
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<td>HIST 1301/1302</td>
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<td>CISY 1311/CIS 1310</td>
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<tr>
<td>CHEM 2423</td>
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Courses available only at TAMIU:

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<td>BIOL 2415</td>
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<td>BIOL 2404</td>
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<td>BIOL 4471</td>
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<tr>
<td>CHEM 3451</td>
<td>Biochemistry</td>
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**Clinical Laboratory Sciences Professional Courses**

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<tbody>
<tr>
<td>CLSC 2000</td>
<td>Intro. to Clinical Lab. Sciences</td>
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<tr>
<td>CLSC 3051,3052</td>
<td>Hematology/Lab</td>
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<tr>
<td>CLSC 3004,3003</td>
<td>Parasitology and Mycology/Lab</td>
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<tr>
<td>CLSC 3072,3073</td>
<td>Molecular and Immunological Diagnostic/Lab</td>
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<tr>
<td>CLSC 3060,3064</td>
<td>Immunohematology/Laboratory</td>
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<tr>
<td>CLSC 3033,3034</td>
<td>Medical Microbiology/Lab</td>
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<tr>
<td>CLSC 3081,3082</td>
<td>Clinical Chemistry/Lab</td>
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<tr>
<td>CLSC 3010</td>
<td>Body Fluids</td>
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<tr>
<td>CLSC 3001</td>
<td>Phlebotomy Practicum</td>
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<tr>
<td>CLSC 4053</td>
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<td>CLSC 4033</td>
<td>Advanced Med. Microbiology</td>
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<td>CLSC 4092</td>
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<td>CLSC 4055</td>
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<tr>
<td>CLSC 4093</td>
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<td>CLSC 4057</td>
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<td>CLSC 4070</td>
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<td>CLSC 4087</td>
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<td>CLSC 3011</td>
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<tr>
<td>CLSC 4035</td>
<td>Intro. to Molecular Diagnostics</td>
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**Additional Science and Math Requirements for Each CLS Option**

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<td>General CLS</td>
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**Premedical**

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<td>Organic Chemistry II/Lab</td>
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<td>MAT 1214</td>
<td>Calculus I</td>
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<td>PHY 1603/1611</td>
<td>Physics I/Lab</td>
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<td>PHY 1623/1631</td>
<td>Physics II/Lab</td>
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**Business Option**

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<td>MS 1013</td>
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<tr>
<td>MAT 1033</td>
<td>Algebra w/Calc. for Bus.</td>
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<tr>
<td>IS 3003</td>
<td>Principles of Information Systems for Management</td>
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**Course Descriptions**

**Bachelor of Science in Clinical Laboratory Science**

**Post-baccalaureate CLS Certificate and Categorical Options**

**CLSC 2000**  Introduction to Clinical Laboratory Sciences  
3.0 Semester Credit Hours

An overview of the clinical laboratory science profession. There are three general areas of study. The first is information on the profession including history, educational requirements, job responsibilities and opportunities as well as the structure and role of the clinical laboratory in medicine. The second is an introduction to medical terminology using an overview of the body systems. Examples of the use of laboratory tests to detect pathologies in these systems is included. The third area is laboratory mathematics and quality assurance. This Web-based course is offered through the UT Telecampus. Enrollment is open to laboratory science students at other universities both in state and out of state. Texas residents and non-residents living in Texas pay applicable tuition and fees of UTHSCSA. The cost for non-Texas residents living outside of Texas is $165.50 per semester credit hour.

**CLSC 2005**  Special Topics in Parasitology and Mycology  
1.0–3.0 Semester Credit Hours

Permission from course director required to enroll  
Prerequisite: proficiency exam

This course is designed for students who have completed a course which included parasitology and mycology at an accredited CLT/MLT program. The course provides the student the opportunity to gain an understanding of selected parasitology and mycology topics which may include theory and/or practice. The topics vary according to student’s previous experience and education. Credit hours are variable. Hours will be assigned based on the topics covered.

**CLSC 2053**  Special Topics in Hematology  
1.0–5.0 Semester Credit Hours

Permission from course director required to enroll  
Prerequisite: proficiency exam

This course is designed for students who have completed a hematology course at an accredited CLT/MLT program. The course provides the student the opportunity to gain an understanding of selected hematology topics which may include theory and/or practice. The topics vary according to student’s previous experience and education. Credit hours are variable. Hours will be assigned based on the topics covered.
CLSC 3001 Phlebotomy Practicum
0.5 Semester Credit Hour
Under the direction and supervision of a clinical instructor in a hospital or outpatient facility, the student will be given the opportunity to gain experience and expertise in phlebotomy procedures. This practicum may be taken anytime after the student has been accepted into the program. Positions will be based on the availability of sites. Students must arrange this practicum with the education coordinator before enrolling. It is highly recommended that this practicum be completed before the senior year.

CLSC 3003 Parasitology and Mycology Laboratory
1.0 Semester Credit Hour
Concurrent enrollment in CLSC 3004
A clinical laboratory course emphasizing the diagnostic stages of parasites of man. In the mycology portion of the course, students will have the opportunity to isolate and identify fungi pathogenic to man. Lab fee: $20. Microscope fee: $16.

CLSC 3004 Parasitology and Mycology
2.0 Semester Credit Hours
The parasitology portion of this course is a study of protozoa, helminths, and arthropods that parasitize man. Emphasis is placed on the identification and differentiation of pathogenic organisms. The mycology portion of the course is a study of the structural characteristics, diagnostic features and isolation methods of fungal agents pathogenic to man. Specimen collection, processing, and handling are discussed.

CLSC 3010 Body Fluids
2.0 Semester Credit Hours
A study of selected body fluids including urine, amniotic fluid, cerebrospinal fluid, pleural fluid, peritoneal fluid, pericardial fluid, and synovial fluid. Renal physiology and the physical and chemical properties of urine and cellular elements of the urine in healthy and diseased states are studied. The formation and function of cerebrospinal fluid and amniotic fluid will be discussed. The anatomy and physiology of pleural, peritoneal, and pericardial cavities will be presented. Attention is given to the cellular and formed elements found in these body fluids. In addition, this course includes the performance of various laboratory procedures utilized in the analysis of each of these fluids. Case studies will be used to emphasize the changes in laboratory results associated with various disease states. Principles and applications of quality control procedures are practiced. Lab fee: $30. Microscope fee: $16.

CLSC 3011 Quality Assurance in the Clinical Laboratory
1.0 Semester Credit Hour
This course presents the principles, statistics, and applications of quality assurance as it pertains to the clinical laboratory. The course will emphasize the statistics that are needed to evaluate a quality control system, the rules that are necessary for interpreting the quality control results, and the role of quality control in a quality assurance program. The impact of federal and state regulatory agencies on the clinical laboratory and its quality assurance program will be discussed. A large part of this course is via computer-assisted instruction.

CLSC 3020 Special Topics in Clinical Immunology
1.0–2.0 Semester Credit Hours
Permission from course director required to enroll
Prerequisite: proficiency exam
This course is designed for students who have completed a course which included clinical immunology/serology at an accredited CLT/MLT program. The course provides the student the opportunity to gain an understanding of selected immunology/serology topics which may include theory and/or practice. The topics vary according to student's previous experience and education. Credit hours are variable. Hours will be assigned based on the topics covered.

CLSC 3022 Special Topics in Body Fluids
1.0–2.0 Semester Credit Hours
Permission from course director required to enroll
Prerequisite: proficiency exam
This course is designed for students who have completed a course which included urinalysis and other body fluids at an accredited CLT/MLT program. The course provides the student the opportunity to gain an understanding of selected body fluids topics which may include theory and/or practice. The topics vary according to student's previous experience and education. Credit hours are variable. Hours will be assigned based on the topics covered.

CLSC 3033 Medical Microbiology
3.0 Semester Credit Hours
Prerequisite: BIO 3713, 3722
A comprehensive study of medically important microorganisms including their composition, morphology, and growth requirements. Methods for identification including biochemical reactions of significant pathogens and their role in infectious disease will be stressed.

CLSC 3034 Medical Microbiology Laboratory
2.0 Semester Credit Hours
Concurrent enrollment in CLSC 3033
A laboratory course emphasizing diagnostic clinical microbiology. Examination of samples from different body sites provide students the opportunity to recognize and identify organisms that comprise the normal flora and those that are potential pathogens. This course includes conventional and rapid biochemical methods for detection and identification of significant organisms. Principles and applications of quality control procedures are practiced. Lab fee: $30. Microscope fee: $16.

CLSC 3035 Special Topics in Medical Microbiology
1.0–5.0 Semester Credit Hours
Permission from course director required to enroll
Prerequisite: proficiency exam
This course is designed for students who have completed a medical microbiology course at an accredited CLT/MLT program. The course provides the student the opportunity to gain an understanding of selected medical microbiology topics which may include theory and/or practice. The topics vary according to student's previous experience and education. Credit hours are variable. Hours will be assigned based on the topics covered.

CLSC 3051 Hematology
3.0 Semester Credit Hours
Prerequisite: AHS 1883
A study of the normal production, maturation, and function of erythrocytes, leukocytes, and platelets. Common disorders involving such cells will be discussed with emphasis on the pathogenic mechanisms. Hematologic laboratory tests and their correlations with disease states will also be examined. Normal hemostasis will be considered including pertinent laboratory tests used in diagnosis of coagulation problems.
CLSC 3052  Hematology Laboratory
2.0 Semester Credit Hours
Concurrent enrollment in CLSC 3051
A clinical laboratory course emphasizing manual and semiautomated cell counting techniques and other basic hematologic tests. Time is devoted to the examination of normal and abnormal blood smears with emphasis on identification of cells and their relationships to various disease processes. An introduction to quality control methods in the hematology laboratory will also be included. Lab fee: $30. Microscope fee: $16.

CLSC 3060  Immunohematology
2.0 Semester Credit Hours
A study of the major blood groups of humans including the red cell antigen systems, alloantibodies, and non-immune stimulated antibodies. The relationship of blood group systems to compatibility testing, transfusion reactions, and hemolytic disease of the newborn will be discussed.

CLSC 3063  Special Topics in Immunohematology
1.0–4.0 Semester Credit Hours
Permission from course director required to enroll
Prerequisite: proficiency exam
This course is designed for students who have completed an immunohematology course at an accredited CLT/MLT program. The course provides the student the opportunity to gain an understanding of selected immunohematology topics which may include theory and/or practice. The topics vary according to student’s previous experience and education. Credit hours are variable. Hours will be assigned based on the topics covered.

CLSC 3064  Immunohematology Laboratory
1.5 Semester Credit Hours
Concurrent enrollment in CLSC 3060
A laboratory course emphasizing basic bloodbanking techniques including blood typing, identification of alloantibodies, and resolution of typing discrepancies. Techniques used in resolution of compatibility testing, investigation of transfusion reactions, and hemolytic disease of the newborn are practiced. Principles and applications of quality control are introduced. Lab fee: $30. Microscope fee: $16.

CLSC 3070  Diagnostic Immunology Lecture
1.5 Semester Credit Hours
Prerequisite: Immunology
This didactic course presents the principles and applications of immunology as it pertains to diagnosis of disease states. The course will cover methods to detect infectious as well as autoimmune diseases using immunologic technologies such as immunofluorescence, enzyme immunoassays, and flow cytometry. Correlation of the laboratory results with the disease states will be emphasized. Clinical applications of flow cytometry, histocompatibility testing, serology, and immunochemistry assays will be presented.

CLSC 3071  Diagnostic Immunology Laboratory
0.5 Semester Credit Hour
This laboratory course will offer the opportunity for students to perform immunologic procedures commonly used in the diagnosis of infectious and autoimmune diseases. Principles and applications of quality control procedures are practiced. Lab fee: $30. Microscope fee: $16.

CLSC 3072  Molecular and Immunological Diagnostics
4.0 Semester Credit Hours
Prerequisite: BIO 2313 Genetics
This didactic course presents the principles of molecular biology and an in-depth review of immunology. Molecular and immunologic techniques such as PCR, western blotting, flow cytometry, and immunochemistry assays will be discussed with an emphasis on the diagnosis of disease states. Clinical applications in forensics, paternity testing, diagnosis of infectious disease states, inherited conditions and neoplasms will be presented.

CLSC 3073  Molecular and Immunological Diagnostics Laboratory
1.0 Semester Credit Hour
Concurrent enrollment in CLSC 3072
This laboratory course will offer the opportunity for students to perform both molecular and immunologic techniques. Students will perform molecular diagnostic techniques such as PCR and gel electrophoresis that are used in the investigation of inherited conditions and neoplasms and become familiar with potential sources of error. Students will also perform immunologic procedures commonly used in the diagnosis of infectious and autoimmune diseases. Principles and applications of quality control procedures are practiced.

CLSC 3081  Clinical Chemistry
2.5 Semester Credit Hours
Prerequisites: CHE 2203, 2242; BIO 3513
The study of carbohydrates, enzymes, proteins and other chemicals routinely analyzed in clinical chemistry laboratories. Emphasis is placed upon principles of testing, methods of analysis, data interpretation, and clinical significance of results. Laboratory mathematics, quality control, safety, and instrumentation also are topics covered.

CLSC 3082  Clinical Chemistry Laboratory
1.5 Semester Credit Hours
Prerequisites: BIO 3513, AHS 3463 and concurrent enrollment in CLSC 3081
A laboratory course emphasizing biochemical analysis of body fluids utilizing manual procedures and semiautomated instrumentation. Students are given the opportunity to develop motor skills and organizational techniques in biochemical procedures. Principles and applications of quality control procedures are practiced. Lab fee: $30.

CLSC 3083  Special Topics in Clinical Chemistry
1.0–4.0 Semester Credit Hours
Permission from course director required to enroll
Prerequisite: proficiency exam
This course is designed for students who have completed a clinical chemistry course at an accredited CLT/MLT program. The course provides the student the opportunity to gain an understanding of selected clinical chemistry topics which may include theory and/or practice. The topics vary according to student’s previous experience and education. Credit hours are variable. Hours will be assigned based on the topics covered.

INTD 4006  Professional Issues
1.0 Semester Credit Hour
Using a workshop format, this interdisciplinary course will provide students with an overview of ethical issues in health care professions. Topics to be discussed include responsibilities of the health care practitioner, life and death decisions, ethics issues in managed
care, legal issues in several areas such as patient confidentiality, sexual harassment and informed consent, ethics in research and other critical issues related to healthcare practice. Problem cases will be used to stimulate discussion among students.

CLSC 4020 Issues in Health Care
1.0–3.0 Semester Credit Hours
Special topics in health care and clinical laboratory science are offered and may vary.

CLSC 4033 Advanced Medical Microbiology
2.0 Semester Credit Hours
This course will discuss etiology of infectious diseases in different body sites. Laboratory identification of suspected etiologic agents, using conventional methods, will be emphasized. Recent developments in microbiology and new rapid methods in the identification of bacterial agents of infectious disease will also be presented. One section of this course is in a distance-learning format offered via the Web. Students wanting to enroll in the Web section must receive permission from the instructor. Students in this section will pay the instructional fee for the course. Texas residents and non-residents living in Texas pay applicable tuition and fees of UTHSCSA. The cost for non-Texas residents living outside of Texas is $165.50 per semester credit hour.

CLSC 4035 Introduction to Molecular Diagnostics
1.5 Semester Credit Hours
This course is a study of recombinant DNA concepts and technology. Applications of this technology in diagnosis and therapy of disease is emphasized. The course is a combination of lecture and laboratory. Prerequisites include genetics and junior CLSC coursework. One section of this course is in a distance-learning format offered via the Web. Students wanting to enroll in the Web section must receive permission from the instructor. Students in this section will pay the instructional fee for the course. Texas residents and non-residents living in Texas pay applicable tuition and fees of UTHSCSA. The cost for non-Texas residents living outside of Texas is $165.50 per semester credit hour. Lab fee: $30.

CLSC 4037 Microbiology Practicum
4.0 Semester Credit Hours
Under the supervision and direction of a clinical instructor in the hospital setting, the student is introduced to the functional roles of the clinical microbiology laboratory. Emphasis is on the practical application of microbiological principles in the areas of bacteriology, parasitology, mycology, and mycobacteriology. Students have the opportunity to gain experience in the isolation and identification of both indigenous microflora and potential disease producing organisms of man. Concepts of Total Quality Management (TQM) are emphasized.

CLSC 4038 Microbiology Categorical Practicum
10.0 Semester Credit Hours
Under the direction and supervision of a clinical instructor in the clinical microbiology lab, the student is introduced to the functional roles of the clinical microbiology laboratory. Students will have the opportunity to develop proficiency in the areas of bacteriology, parasitology, mycology, mycobacteriology, immunology, and virology. A period of time will be devoted to allow the student to gain experience in performing microbiological studies in each of these areas.

CLSC 4039 Selected Practicum Experience in Medical Microbiology
3.0–5.0 Semester Credit Hours
Permission from course director required to enroll
This course is for individuals who have completed an accredited CLT/MLT medical microbiology practicum. The course emphasizes the areas in medical microbiology in which the student lacks previous experience or requires updated proficiency. Credit hours are variable. Hours will be assigned based on the topics covered.

CLSC 4053 Advanced Hematology
2.0 Semester Credit Hours
Using problem-based learning approach, this advanced course presents the pathogenic mechanisms of disorders involving erythrocytes, leukocytes, platelets, and coagulation factors. The methodology for detection of diseases of the blood and blood forming organs is examined. The peripheral blood and bone marrow findings in relation to various hematopoietic disease processes will be emphasized. Abnormalities of hemostatic mechanisms and their correlation with laboratory tests will be presented.

CLSC 4054 Advanced Hematology/Web-Based
2.0 Semester Credit Hours
This advanced course in hematology/hemostasis presents the pathogenic mechanisms of disorders involving erythrocytes, leukocytes, platelets, and coagulation factors. The methodology for detection of diseases of the blood and blood forming organs is examined with emphasis on the interpretation of the findings and determination of appropriate reflex testing. Morphologic changes in the peripheral blood and bone marrow will be emphasized. This is a Web-based course. Enrollment is open to clinical laboratory technicians/medical laboratory technicians or military-trained laboratory personnel who have been accepted into the CLS program or by special permission from the course director. Texas residents and non-residents living in Texas pay applicable tuition and fees of UTHSCSA. The cost for non-Texas residents living outside of Texas is $165.50 per semester credit hour.

CLSC 4055 Advanced Immunohematology
2.0 Semester Credit Hours
This is a lecture course which uses case studies to emphasize theory and principles and develop problem solving skills. Major areas of focus include collection, processing and therapeutic use of blood components, investigation of autoantibodies and alloantibodies as detected in hemolytic disease of newborns, transfusion reactions, and autoimmune hemolytic anemias. The HLA system and applications in transplantation and paternity testing will also be discussed. One section of this course is in a distance-learning format offered via the Web. Students wanting to enroll in the Web section must receive permission from the instructor. Students in this section will pay the instructional fee for the course. Texas residents and non-residents living in Texas pay applicable tuition and fees of UTHSCSA. The cost for non-Texas residents living outside of Texas is $165.50 per semester credit hour.

CLSC 4056 Selected Practicum Experience in Hematology
3.0–5.0 Semester Credit Hours
Permission from course director required to enroll
This course is for individuals who have completed an accredited CLT/MLT clinical hematology practicum. The course emphasizes the areas in clinical hematology in which the student lacks previous experience or requires updated proficiency. Credit hours are variable. Hours will be assigned based on the topics covered.
CLSC 4057  Hematology Practicum
4.0 Semester Credit Hours
Under the direction and supervision of a clinical instructor, the student will have the opportunity to gain expertise and confidence working in the clinical hematology section of the hospital laboratory. Students will be allowed to perform hematologic tests as well as "troubleshoot" automated cell counters. An opportunity to gain proficiency in morphologic evaluation of normal and abnormal cellular morphology, including peripheral blood and bone marrow examination, will be offered. The student will be introduced to the technology of flow cytometry and the immunologic study of disease states. Knowledge of internal and external quality control methods in the hematology laboratory will be emphasized. Students will also have the opportunity to learn the principles of interfacing laboratory instrumentation with the laboratory information system as well as the role of the LIS in test ordering, specimen processing, and reporting results.

CLSC 4058  Hematology Categorical Practicum
6.0 Semester Credit Hours
Under the direction and supervision of a clinical instructor, the student will have the opportunity to gain expertise working in the clinical hematology laboratory. Students will perform routine and special hematologic procedures, "troubleshoot" automated cell counters, gain proficiency in morphologic evaluation of normal and abnormal cellular morphology, including peripheral blood and bone marrow examination. The student will be introduced to the technology of flow cytometry and immunologic study of disease states. In addition, the student will perform routine and special coagulation procedures and evaluate body fluids. Internal and external quality control methods in the hematology/coagulation laboratory will be emphasized. Phlebotomy techniques also will be practiced.

CLSC 4067  Immunohematology Practicum
4.0 Semester Credit Hours
Under the supervision and direction of a clinical instructor in the hospital setting, the student will be given the opportunity to perform routine blood grouping and typing, compatibility testing, and donor unit processing. Experience in solving antibody problems, drawing blood donors, and preparing components will also be offered in this practicum. Quality assurance procedures are practiced on a daily basis.

CLSC 4068  Immunohematology Categorical Practicum
6.0 Semester Credit Hours
Under the supervision and direction of a clinical laboratory instructor, the student will have the opportunity to gain expertise in the various facets of clinical immunohematology. Areas emphasized include donor collection and processing, component preparation, routine grouping and typing, and compatibility testing. Students will perform serologic testing for transfusion transmitted disease. In addition, they will solve complex antibody problems and typing discrepancies using specialized techniques such as enzyme treatment, elution and autoabsorption. Students will perform HLA typing and investigate suspected cases of hemolytic disease of the newborn and transfusion reactions. Quality control procedures and records management for each area will be emphasized.

CLSC 4069  Selected Practicum Experience in Immunohematology
3.0–5.0 Semester Credit Hours
Permission from course director required to enroll
This course is for individuals who have completed an accredited CLT/MLT immunohematology practicum. The course emphasizes the areas in immunohematology and serology in which the student lacks previous experience or requires updated proficiency. Credit hours are variable. Hours will be assigned based on the topics covered.

CLSC 4070  Immunology Practicum
2.0 Semester Credit Hours
The student will be introduced to the technology of flow cytometry and the immunologic study of disease states. In the immunology/serology laboratory, the student will perform routine testing of antigen/antibody reactions to help in the diagnosis of certain disease states.

CLSC 4083  Advanced Clinical Chemistry
3.0 Semester Credit Hours
This is an advanced clinical lecture course emphasizing abnormalities in liver, cardiac, renal, and endocrine systems and their effect on chemical blood constituents. The theories and use of complex biochemical methodologies including immunochemical assays, chromatography, and electrophoresis will also be discussed. One section of this course is in a distance-learning format offered via the Web. Students wanting to enroll in the Web section must receive permission from the instructor. Students in this section will pay the instructional fee for the course. Texas residents and non-residents living in Texas pay applicable tuition and fees of UTHSCSA. The cost for non-Texas residents living outside of Texas is $165.50 per semester credit hour.

CLSC 4087  Chemistry Practicum
4.0 Semester Credit Hours
Under the supervision and direction of a clinical instructor in the hospital setting, the student is introduced to the delivery of health care as it relates to the chemistry diagnostic laboratory. The student has the opportunity to gain experience in toxicology, electrophoresis, immunochemical assays, urinalysis, and special chemistry procedures including neonatal intensive care testing. The student will be given the opportunity to operate modern, state-of-the-art clinical laboratory equipment. Motor skills as well as interpretive skills will be stressed. Phlebotomy techniques also will be practiced. Knowledge of internal and external quality control methods in the clinical chemistry laboratory will be emphasized.

CLSC 4088  Clinical Chemistry Categorical Practicum
6.0 Semester Credit Hours
Under the supervision and direction of a clinical instructor in a hospital or reference laboratory setting, the student will have the opportunity to gain expertise and confidence working with automated clinical analyzers and performing esoteric clinical chemistry analyses. The student will have the opportunity to operate state-of-the-art high-volume chemical analyzers, to observe preventive maintenance and troubleshooting procedures, and to gain firsthand experience with the recording and evaluation of quality control results. The student will perform highly specialized chemical analyses which may include serum protein electrophoresis, lipoprotein electrophoresis, toxicology screens, immunochemical assays, lecithin/sphingomyelin ratio for assessment of fetal lung maturity, blood gas analyses, and blood gas instrument troubleshooting procedures. The
CLSC 4089  Selected Practicum Experience in Clinical Chemistry
3.0–5.0 Semester Credit Hours
Permission from course director required to enroll
This course is for individuals who have completed an accredited CLT/MLT clinical chemistry practicum. The course emphasizes the areas in clinical chemistry in which the student lacks previous experience or requires updated proficiency. Credit hours are variable. Hours will be assigned based on the topics covered.

CLSC 4091  Independent Study
1.0–12.0 Semester Credit Hours
A plan of study is determined by the supervising faculty. The participating student and supervising faculty develop the course requirements and forms of evaluation. Credit hours are determined by the scope of the project.

CLSC 4092  Management I
1.0 Semester Credit Hour
This course is designed to present the principles of communication skills and group dynamics. Topics in verbal communication concentrate on interviewing techniques. Writing of resumes and developing and designing presentations are included. Learning principles, objectives, and use of audiovisual aids are presented. Development and use of evaluation tools are covered. One section of this course is in a distance-learning format offered via the Web. Students wanting to enroll in the Web section must receive permission from the instructor. Texas residents and non-residents living in Texas pay applicable tuition and fees of UTHSCSA. The cost for non-Texas residents living outside of Texas is $165.50 per semester credit hour.

CLSC 4093  Management II Techniques for Clinical Laboratory Sciences
2.0 Semester Credit Hours
A major portion of this course is devoted to a capstone project developed by the class. Class topics will vary depending on the project assigned but will generally include ethics, leadership styles, planning, financial analysis in the laboratory, laboratory information (systems, data management, and analysis) and writing procedure manuals. Current issues in managed care are considered. Other timely topics in health care are discussed. One section of this course is in a distance-learning format offered via the Web. Students wanting to enroll in the Web section must receive permission from the instructor. Texas residents and non-residents living in Texas pay applicable tuition and fees of UTHSCSA. The cost for non-Texas residents living outside of Texas is $165.50 per semester credit hour.

Cytogenetics and Molecular Diagnostics
Cytogenetics is a highly complex specialty area of the clinical diagnostic laboratory. Cytogenetic technologists study the morphology and behavior of chromosomes and assist the physician in correlating the chromosome anomaly to the individual’s medical condition. Inherited chromosome alterations are present from conception, and may result in spontaneous abortion or the live birth of a child with mental retardation, learning disabilities, and/or physical anomalies. An example is Down Syndrome in which individuals have an extra chromosome number 21 in their cells. Other chromosome alterations are acquired later in life and may result in malignancy. Leukemias are examples of the acquired chromosomal alterations. Many disorders have only recently been recognized as having a genetic component and more continue to be recognized. Cytogenetic technologists are highly trained members of the health care team who culture cells and perform chromosome analysis from various tissue types such as blood, amniotic fluid, bone marrow, skin, solid tumors, etc. Cytogenetic technologists provide accurate genetic diagnoses so appropriate treatment, counseling, and patient monitoring may occur. Cytogenetic technologists are in great demand and may work in various clinical, research, and educational environments. The program in Cytogenetics offers both an undergraduate degree and a post-baccalaureate certificate option.

Cytogenetics Program Description
The program in Cytogenetics is designed to provide the student with a fundamental understanding of chromosome theory, chromosome identification, clinical correlations, laboratory quality control, and methods of processing various biological specimens for cytogenetic analysis. Full-time students may complete the program in one year. The program curriculum for both the degree and certificate options is identical.

The undergraduate option leads to a Bachelor of Science degree in Clinical Laboratory Science with an area of specialization in cytogenetics. Students must complete general education requirements, prerequisite coursework in the basic sciences and math and accumulate a minimum of 90 semester credit hours (or equivalent) as outlined under “UTHSCSA General Education Requirements,” before beginning the cytogenetics program curriculum.

The post-baccalaureate certificate option is designed for students with a baccalaureate degree in biology, chemistry, microbiology, clinical laboratory science, or other closely related discipline with completed prerequisite courses.

The curriculum is composed of both didactic and clinical courses. The didactic course work must be completed before the clinical courses are taken. Part-time enrollment is possible, but full-time students receive scheduling priority for clinical course work. Most didactic courses are offered only...
once each year. Additional information may be obtained from the Department of Clinical Laboratory Sciences.

Application and Admission
The requirements for consideration for admission are either 90 semester credit hours which include all general education, basic science requirements, including 34 hours in biology, or a degree in a biological or related science, an overall grade point average of 2.5 on a 4.0 scale, and satisfactory completion of specified courses. Applications are accepted on a continuous basis. Admission is competitive for the limited enrollment class that begins in the fall semester. Call the Department of Clinical Laboratory Sciences for availability of positions after July 1.

The applicant must present official documentation of the following to the Registrar’s Office:

1. a. minimum of 90 semester credit hours (degree candidates) which includes all general education, science, and math requisites
   or
   b. a baccalaureate degree in biology, chemistry, or related science
2. a minimum cumulative grade point average (GPA) of 2.5 on a 4.0 scale for all completed coursework
3. original transcripts from all previous colleges attended
4. two letters of reference
5. prerequisite credit hours from the highly recommended courses listed below with a grade of “C” or better, including six semester credit hours of upper-level coursework:
   • Biological Science
     21 hours from the following:
     • General Biology/Lab
     • Genetics
     • Cell Biology
     • Microbiology/Lab
     • Immunology
     • 6 hours from the following or similar courses: Embryology, Anatomy & Physiology, Hematology, Virology, Human Genetics, Molecular Biology
   • Chemistry
     16 hours from the following:
     • Gen Chemistry/Lab
     • Organic Chemistry I/Lab
     • Organic Chemistry II or Biochemistry
   • Mathematics
     3 hours:
     • One course beyond college algebra (statistics recommended)
   • Clinical Laboratory Science (may be taken concurrently with program courses)
     • Introduction to CLS
6. International applicants who have completed part or all of their college level education at schools outside the U.S. must:
   a. submit their foreign transcripts for a course-by-course descriptive evaluation through a university-approved evaluation service, and
   b. score a minimum of 550 on the written, or 213 on the computer-administered Test of English as a Foreign Language (TOEFL).

Official copies of the transcript evaluation and TOEFL score must be submitted directly to the Registrar’s Office from the service provider.

Application forms, reference forms, a list of transcript evaluation services, and applications for the TOEFL exam are available from the Registrar’s Office or may be downloaded from the Web. All completed forms must be submitted directly to the Registrar’s Office.

If an applicant is currently enrolled in college courses, an official transcript should be submitted showing courses in progress. An updated transcript should be sent upon completion of the courses. Conditional admission may be granted contingent upon satisfactory completion of courses in progress. It is the responsibility of the applicant to verify university receipt of all documentation.

Schedule Planning
Students must be advised each semester before being permitted to enroll in cytogenetics curriculum courses. Students who are completing course work to fulfill prerequisites are encouraged to seek advisement from the Program Office.

Certification
Cytogenetics Program graduates are eligible to take the computer administered National Credentialing Agency for Laboratory Personnel (NCA) certification examination upon receipt of their degree or certificate.

Completion of Program
Degree-seeking students must complete all general education requirements. Applicants are encouraged to consult with the Program Advisor before registering for prerequisite courses.

All courses, or their equivalent, listed in the sample curriculum for cytogenetics must be completed prior to graduation. Certificate students with current certification in a clinical laboratory sciences discipline (cytotechnology, clinical laboratory science, etc.) may petition for exemption from didactic courses for which they can demonstrate content equivalency within the last seven years. A student has up to 3 years from the time of entry to complete the required course work.
The minimum grade point average (GPA) required for graduation is an overall 2.5. To progress in the program curriculum a grade of C or better must be earned in each program course. Grades below a C must be remediated before the clinical courses can be attempted.

Students must register for graduation at the beginning of their last semester. All residency and general requirements of the University and School of Allied Health Sciences apply.

**Cytogenetics Curriculum**

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<td>CLSC 4035</td>
<td>Intro to Molecular Diagnostics</td>
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<tr>
<td>CLSC 4040</td>
<td>Genetics Learning System</td>
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<td>CLSC 4041</td>
<td>Clinical Cytogenetics</td>
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<tr>
<td>CLSC 4042</td>
<td>Hematology for the Geneticist</td>
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<tr>
<td>CLSC 4043</td>
<td>Cytogenetics Techniques</td>
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<tr>
<td>CLSC 4044</td>
<td>Current Topics in Genetics</td>
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<tr>
<td>CLSC 4092</td>
<td>Management I</td>
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<tr>
<td>CLSC 4046</td>
<td>Clinical Cytogenetics Laboratory II</td>
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<tr>
<td>CLSC 4049</td>
<td>Cytogenetics Laboratory Practices</td>
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</table>

**Course Descriptions**

**Bachelor of Science Degree or Post-Baccalaureate Certificate in Cytogenetics**

CLSC 4040  Genetics Learning Systems  
1.0 Semester Credit Hours  
Prerequisite: Admission to Cytogenetics Program or consent of instructor

An advanced course which provides the student an opportunity to study the cell cycle, oogenesis, spermatogenesis, Mendelian inheritance, polygenic inheritance, population genetics, medical genetics, clinical cytogenetics and basic molecular techniques. The course is self-paced requiring approximately 1 hour/week viewing slide, tape or computer presentations. Most slide presentations have study guides provided as an aid for the student to master the material.

CLSC 4041  Clinical Cytogenetics  
4.0 Semester Credit Hours  
Prerequisite: CLSC 4040 or consent of instructor

An advanced lecture course covering theories, concepts, and techniques applicable to the practice of clinical cytogenetics. Topics include mitotic and meiotic cell cycles with emphasis on errors and manipulations, chromosome structure, mechanisms of chromosome abnormality formation, cytogenetics syndromes, inheritance patterns, cancer genetics, instability syndromes, clinical correlation of chromosome abnormalities, microscopy, computer imaging, cell culture, analysis, ISCN, pedigree construction, and other current genetic issues.

CLSC 4042  Hematology for the Geneticist  
1.0 Semester Credit Hour  
Prerequisite: Concurrent enrollment in CLSC 4041 or consent of the instructor

An advanced study of the normal production, maturation and function of erythrocytes, leukocytes and platelets. The pathogenic mechanisms as well as the peripheral blood and bone marrow findings in relation to leukocyte disorders will be covered. Study of the correlation of cytogenetic abnormalities to specific disorders will be emphasized.

CLSC 4043  Cytogenetics Techniques  
2.5 Semester Credit Hours  
Prerequisite: Concurrent enrollment in CLSC 4041 or consent of the instructor

An advanced laboratory course designed to cover all aspects of cytogenetic laboratory practice including specimen evaluation, culture initiation, culture maintenance, harvesting, and labeling techniques (conventional, GTG, QFQ, CBG, AgNOR, DA/DAPI, SCE, and FISH), banding pattern recognition, microscopic analysis, computer imaging, computer-assisted karyotyping and ISCN. Instrumentation, solution preparation, laboratory math, quality control, and regulatory issues will be emphasized. Lab fee: $30. Microscope fee: $16.

CLSC 4044  Current Topics in Genetics  
1.0 Semester Credit Hour  
Prerequisite: CLSC 4041 or concurrent enrollment

An advanced seminar course which provides the student an opportunity to acquire knowledge of the latest developments in the field of human genetics with emphasis on the structure, behavior and function of chromosomes as related to human diseases. Discussion sessions follow seminar presentation of critical literature reviews of a specific topic, current journal articles or of individual research. Presenters will be drawn from the cytogenetics community of the HSC and surrounding area. Each student will make a short presentation on a topic of interest selected with the aid of the coordinator.

CLSC 4045  Clinical Cytogenetics Laboratory I  
6.0 Semester Credit Hours  
Prerequisites: CLSC 4041, CLSC 4043, and CLSC 4042

Under the supervision and direction of a clinical instructor in a hospital or reference laboratory setting, the student will have the opportunity to extend their knowledge of principles and techniques of clinical cytogenetics which were presented in the didactic portion of the curriculum. The student will have the opportunity to gain experience with a wide variety of procedures which include culturing, harvesting, slide preparation, staining and analyzing metaphases with emphasis on the processing of peripheral blood samples. Clinical correlations of the chromosomal findings are included. Grades are based on laboratory performance and results achieved on written and/or practical examinations conducted at the particular clinical affiliate to which the student is assigned.

CLSC 4046  Clinical Cytogenetics Laboratory II  
6.0 Semester Credit Hours  
Prerequisite: CLSC 4045 Clinical Cytogenetics Laboratory I

Under the supervision and direction of a clinical instructor in a hospital or reference laboratory setting, the student will have the opportunity to extend their knowledge of principles and techniques of clinical cytogenetics which were presented in the didactic portion of the curriculum. The student will have the opportunity to gain experience with a wide variety of procedures which include...
clustering, harvesting, slide preparation, staining and analyzing metaphases with emphasis on the processing of amniotic fluid and chorionic villi samples. Clinical correlations of the chromosomal findings are included. Grades are based on laboratory performance and results achieved on written and/or practical examinations conducted at the particular clinical affiliate to which the student is assigned.

CLSC 4047  Clinical Cytogenetics Laboratory III
6.0 Semester Credit Hours
Prerequisite: CLSC 4046
Under the supervision and direction of a clinical instructor in a hospital or reference laboratory setting, the student will have the opportunity to gain experience with a wide variety of procedures which include culturing, harvesting, slide preparation, staining and analyzing metaphases with emphasis on the processing of bone marrow and solid tumor samples. Clinical correlations of the chromosomal findings are included. Grades are based on laboratory performance and results achieved on written and/or practical examinations conducted at the particular clinical affiliate to which the student is assigned.

CLSC 4048  Clinical Cytogenetics Laboratory IV
6.0 Semester Credit Hours
Prerequisite: CLSC 4047
Under the supervision and direction of a clinical instructor in a hospital or reference laboratory setting, the student will have the opportunity to gain experience with a wide variety of procedures which include culturing, harvesting, slide preparation, staining and analyzing metaphases with emphasis on quality control, applications of FISH, molecular techniques and computer imaging. Clinical correlations of the chromosomal findings are included. Grades are based on laboratory performance and results achieved on written and/or practical examinations conducted at the particular clinical affiliate to which the student is assigned.

CLSC 4049  Cytogenetics Laboratory Practices
1.5 Semester Credit Hours
Prerequisite: CLSC 4048 or consent of instructor
An exploration of problem solving processes and strategies for resolving difficult cases is the focus of this course. Students will be presented with the opportunity to integrate previously presented topics with experiences gained from clinical practicums. A thorough review of basic principles as applied in the clinical laboratory is included.

CLSC 4050  Research in Cytogenetics
1.0 Semester Credit Hour
Prerequisites: CLSC 4047 and consent of the Program Director and Instructor
An advanced course which provides the student an opportunity to apply scientific method to a clinical laboratory research problem, demonstrate a systematic application of hypothesis formation and decision-making through research design principles. Course evaluation is based upon performance on the term project. May be repeated for credit.

Molecular Diagnostics
Molecular Diagnostics is a highly specialized area of the laboratory requiring great precision and accuracy in processing specimens for analysis and interpretation of results. Biotechnology techniques can be used to provide precise information for clinical diagnosis including identifying microorganisms, matching tissue donors and recipients, and identifying genetic mutations. The techniques are also important in paternity testing and forensic applications. The field of molecular technology is expanding rapidly and technologists are in great demand. Technologists may be employed in various clinical, research, educational, and forensic environments.

The Program in Molecular Diagnostics offers both an undergraduate degree and a post-baccalaureate certificate option.

Program Description
The program in Molecular Diagnostics is designed to provide the student with a fundamental understanding of and ability to utilize molecular techniques in the clinical, research, or forensic laboratory. Full-time students complete the professional part of the program in one year. The program curriculum for both the degree and certificate options is identical.

The undergraduate option leads to a Bachelor of Science degree in Clinical Laboratory Science with an area of specialization in molecular diagnostics. Students must complete general education requirements, prerequisite coursework in the basic sciences and math, and accumulate a minimum of 90 semester credit hours (or equivalent) before beginning the molecular diagnostics program curriculum.

The post-baccalaureate certificate option is designed for students who have a baccalaureate degree in biology, chemistry, microbiology, clinical laboratory science, or other closely related discipline and have completed prerequisite courses.

The curriculum is composed of both didactic and clinical courses. The didactic course work must be completed before the clinical courses are taken. Part-time enrollment is possible, but full-time students receive scheduling priority for clinical course work. Most didactic courses are offered only once each year. Additional information may be obtained from the Department of Clinical Laboratory Sciences.

Application and Admission
Admission requirements include: 90 semester credit hours, including all general education and basic science requirements or a degree in a biological or related science; an overall grade point average of 2.5 on a 4.0 scale; and satisfactory completion of specified courses. Applications are accepted on a continuous basis. Admission is competitive for the limited enrollment class that begins in the fall.
semester. Call the Department of Clinical Laboratory Sciences for availability of positions after July 1.

The applicant must present official documentation of the following to the Registrar’s Office:

1. a. minimum of 90 semester credit hours (degree candidates) which includes all general education, science, and math prerequisites

   or

   b. a baccalaureate degree in biology, chemistry, or related science

2. a minimum cumulative grade point average (GPA) of 2.5 on a 4.0 scale for all completed coursework

3. original transcripts from all previous colleges attended

4. two letters of reference

5. prerequisite credit hours from the highly recommended courses listed below with a grade of “C” or better, including six semester credit hours of upper-level coursework:

   • Biological Science
     21 hours from the following:
     • General Biology/Lab
     • Genetics
     • Cell Biology
     • Microbiology/Lab
     • Immunology (required)
     • 6 hours from the following or similar courses:
       Embryology, Anatomy & Physiology, Hematology, Virology, Human Genetics, Molecular Biology

   • Chemistry
     16 hours from the following:
     • Gen Chemistry/Lab
     • Organic Chemistry/Lab
     • Organic or Biochemistry (preferred)

   • Mathematics
     3 hours:
     • One course beyond college algebra
       (statistics recommended)

   • Clinical Laboratory Science (may be taken concurrently with program courses)
     • Introduction to CLS

6. International applicants who have completed part or all of their college-level education at schools outside the U.S. must:
   a. submit their foreign transcripts for a course-by-course descriptive evaluation through a university-approved evaluation service, and
   b. score a minimum of 550 on the written or 213 on the computer-administered Test of English as a Foreign Language (TOEFL).

Official copies of the transcript evaluation and TOEFL score must be submitted directly to the Registrar’s Office from the service provider.

Application forms, reference forms, a list of transcript evaluation services, and applications for the TOEFL exam are available from the Registrar’s Office or may be downloaded from the Web. All completed forms must be submitted directly to the Registrar’s Office.

If an applicant is currently enrolled in college courses, an official transcript should be submitted showing courses in progress. An updated transcript should be sent upon completion of the courses. Conditional admission may be granted contingent upon satisfactory completion of courses in progress. It is the responsibility of the applicant to verify university receipt of all documentation.

Schedule Planning
Students must be advised each semester before being permitted to enroll in curriculum courses. Students who are completing course work to fulfill prerequisites are encouraged to seek advisement from the Program Office.

Certification
Molecular Diagnostics Program graduates are eligible to take the computer administered National Credentialing Agency for Laboratory Personnel (NCA) certification examination upon receipt of their degree or certificate.

Completion of Program
Degree-seeking students must complete all general education requirements. Applicants are encouraged to consult with the Program Advisor before registering for prerequisite courses.

All courses, or their equivalent, listed in the sample curriculum for molecular diagnostics must be completed prior to graduation. Certificate students with current certification in a clinical laboratory sciences discipline (cytotechnology, clinical laboratory science, etc.) may petition for exemption from didactic courses for which they can demonstrate content equivalency within the last seven years. A student has up to 3 years from the time of entry to complete the required course work.

The minimum grade point average (GPA) required for graduation is an overall 2.5. To progress in the program curriculum a grade of C or better must be earned in each program course. Grades below a C must be remediated before the clinical courses can be attempted.

Students must register for graduation at the beginning of their last semester. All residency and general requirements of the University and School of Allied Health Sciences apply.
Molecular Diagnostics Curriculum

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>CLSC 4040</td>
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<td>CLSC 4036</td>
<td>Advanced Molecular Diagnostics</td>
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<td>CLSC 4092</td>
<td>Management for CLS I</td>
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<td>CLSC 4034</td>
<td>Advanced Molecular Diagnostics Lab</td>
<td>2.0</td>
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<td>CLSC 4044</td>
<td>Current Topics in Genetics</td>
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<td>Hematology for the Geneticist</td>
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<td>CLSC 4035</td>
<td>Introduction to Molecular Diagnostics</td>
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<td>CLSC 4010</td>
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<td>Adv. Molecular Diagnostics Practicum III</td>
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<td>Adv. Molecular Diagnostics Practicum IV</td>
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<td>Molecular Diagnostics Laboratory Practices</td>
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<td>Advanced Molecular and Laboratory Diagnostics — Lab</td>
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Course Descriptions

Bachelor of Science Degree or Post-baccalaureate Certificate in Molecular Diagnostics

CLSC 4010 Advanced Molecular Diagnostics Practicum I

Under the direction of a qualified instructor, the student will have the opportunity to gain expertise and confidence working with general molecular biology and molecular-based diagnostic and identification techniques. The specific laboratories will include any and all molecular-based laboratories with an emphasis on the clinical laboratory and clinical diagnosis. In addition, expertise in the pathology laboratory, research laboratory, forensic laboratory, biotechnology laboratory, and company based R&D laboratory will be acquired. Students will have the opportunity to become proficient at clinical specimen processing for molecular diagnostics as well as non-clinical processing. Specific techniques will be emphasized and performed in the various laboratories.

CLSC 4011 Advanced Molecular Diagnostics Practicum II

Under the direction of a qualified instructor, the student will have the opportunity to gain expertise and confidence working with general molecular biology and molecular-based diagnostic and identification techniques. The specific laboratories will include any and all molecular-based laboratories with an emphasis on the clinical laboratory and clinical diagnosis. In addition, expertise in the pathology laboratory, research laboratory, forensic laboratory, biotechnology laboratory, and company based R&D laboratory will be acquired. Students will have the opportunity to become proficient at clinical specimen processing for molecular diagnostics as well as non-clinical processing. Specific techniques will be emphasized and performed in the various laboratories.

CLSC 4012 Advanced Molecular Diagnostics Practicum III

Under the direction of a qualified instructor, the student will have the opportunity to gain expertise and confidence working with general molecular biology and molecular-based diagnostic and identification techniques. The specific laboratories will include any and all molecular-based laboratories with an emphasis on the clinical laboratory and clinical diagnosis. In addition, expertise in the pathology laboratory, research laboratory, forensic laboratory, biotechnology laboratory, and company based R&D laboratory will be required. Students will have the opportunity to become proficient at clinical specimen processing for molecular diagnostics as well as non-clinical processing. Specific techniques will be emphasized and performed in the various laboratories.

CLSC 4013 Advanced Molecular Diagnostics Practicum IV

Under the direction of a qualified instructor, the student will have the opportunity to gain expertise and confidence working with general molecular biology and molecular-based diagnostic and identification techniques. The specific laboratories will include any and all molecular-based laboratories with an emphasis on the clinical laboratory and clinical diagnosis. In addition, students will have the opportunity to acquire expertise in the pathology laboratory, research laboratory, forensic laboratory, biotechnology laboratory, and company based R&D laboratory. Students will have the opportunity to become proficient at clinical specimen processing for molecular diagnostics as well as non-clinical processing. Specific techniques will be emphasized and performed in the various laboratories.

CLSC 4014 Advanced Molecular Laboratory Practices

2.0 Semester Credit Hours

This is an advanced course designed to review basic principles and reinforce previous work and experiences. Students will review all course work, specific techniques, problem situations, and unique experiences acquired during the practicum portion of instruction. The advanced diagnostic experience acquired by the student will be correlated with clinical case studies, problems in biotechnology, problems in forensics, and unique research situations. An in-depth exploration of the problem solving process and strategies for resolving difficult cases is a main focus of the course. The students will be tested and will have the opportunity to prepare for the certification examination as a specialist in molecular biology.

CLSC 4034 Advanced Molecular and Laboratory Diagnostics — Lab

2.0 Semester Credit Hours

The laboratory is offered in conjunction with CLSC 4036 as a senior-level course. Direct hands-on experience will be included in sample preparation, DNA purification, RNA purification, tissue culture, viral culture, electrophoresis, restriction enzyme manipulation, blotting technology, Southern/Northern/Western Blot, PCR, PT-PCR, LCR, NASBA, probe design, primer design, and advanced instrumentation. DNA sequencing, cloning, DNA fingerprinting, and protein purification and analysis will be included. Cases relevant to genetic disease, forensic analysis, and molecular-based diagnosis and design will be discussed.

CLSC 4036 Advanced Molecular and Laboratory Diagnostics — Lecture

3.0 Semester Credit Hours

The course is offered as an undergraduate, senior-level course in the Department of Clinical Laboratory Science. The design is intended to give senior students an understanding of the use of advanced technology in the diagnosis, treatment, and monitoring of the disease process. Students will have the opportunity to acquire experience in clinical laboratory diagnostic design and detailed hands-on experience in the laboratory. The course will include molecular diagnostic techniques, amplification and micro-array technology, Southern/Northern/Western blotting, advanced clinical virology, tissue culture techniques, and advanced instrumentation. Students will participate in an analysis and presentation of clinical cases relevant to new and innovative laboratory technology.
Master of Science in Clinical Laboratory Sciences

The University of Texas Health Science Center at San Antonio (UTHSCSA) offers a Master of Science degree in Clinical Laboratory Sciences. This graduate program is designed for the clinical laboratory practitioner or other science major who wishes to specialize in a specific scientific area. Two tracks are offered: one in forensic/analytical toxicology, and the other in immunohematology. Both tracks require a common core of graduate courses, clinical practicums, electives, and the completion of a research project. The minimum number of credit hours for graduation is 40. Research opportunities in specialized laboratories throughout the city and in laboratories at UTHSCSA are available.

Admission Requirements

To be considered for admission to the master’s program in clinical laboratory sciences, the applicant must have: completed a bachelor’s degree in clinical laboratory science (medical technology), biology, chemistry, or other related discipline from an accredited institution in the United States; a minimum undergraduate grade point average (GPA) of 3.0 (out of a possible 4.0); Graduate Record Examination scores with a minimum 1000 (combined verbal and quantitative); and scores must not be older than five years.

Students whose native language is not English must score a minimum of 550 on the written Test of English as a Foreign Language (TOEFL) or 213 on the computer-administered TOEFL.

Admission Prerequisites

Immunohematology Track

- Bachelor’s degree in clinical laboratory sciences (medical technology), chemistry, biology, or closely related discipline including:
  
  | Biological Science | 16 semester hours (24 quarter) |
  | Chemistry | 16 semester hours (24 quarter) |
  | Mathematics | 1 semester of college level, not below the level of precalculus |
  | Statistics | 1 semester |

- Certification as a Clinical Laboratory Scientist (CLS) or Immunohematologist (CLS/I) by NCA, or as a medical technologist (MT) or blood bank technologist (BB) by ASCP. Foreign certification is not recognized as equivalent.
- A minimum of one year post-baccalaureate clinical experience acceptable to the Medical Director of the specialist in blood banking (SBB) program.

Toxicology Track

- Calculus 1 semester
- General chemistry 2 semesters
- Organic I & II 1 semester
- Biochemistry 8 credit hours including physiology
- Biology 1 course
- Computer science 2 semesters
- Physics or electronics 1 semester
- Instrumental analysis or clinical chemistry 1 semester
- Immunology and statistics are highly recommended

Master of Science Degree Program Core Curriculum

The following graduate level courses must be taken by all students regardless of specialty track:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
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<tbody>
<tr>
<td>INTD 5005</td>
<td>Biochemistry</td>
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<tr>
<td>MICRO 5051</td>
<td>Introduction to Immunology</td>
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<tr>
<td>INTD 5064</td>
<td>Applied Statistics</td>
<td>3.0</td>
</tr>
<tr>
<td>INTD 6002</td>
<td>Ethics in Research</td>
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</table>

Curriculum for Immunohematology Track

During the first year, the student will participate in the Specialist in Blood Banking Program offered jointly by UTHSCSA and University Hospital. This program is accredited by the American Association of Blood Banks. Students will enroll in specific lectures and practicums designed to provide specialized knowledge for transfusion services, donor services, and HLA testing. Practicums will be at University Hospital as well as other facilities throughout the city and state. Continuation in the graduate program is contingent on successfully passing the national certification examination as a specialist in blood banking.

Any remaining core graduate courses must be completed in the second year. Electives will be used to complement the applicant’s career objectives and to provide the requisite knowledge to complete the research project.

Applicants wishing to enter the graduate program who have successfully completed an approved Specialist in Blood Banking program and who have passed the national certification examination should consult with the graduate advisor for options available to them.

Proposed course schedule for Master of Science Degree in Clinical Laboratory Sciences with specialty in immunohematology:

First Year*

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tr>
<td>CLSC 5001</td>
<td>Basic Concepts in Immunohematology</td>
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</tr>
<tr>
<td>CLSC 5002</td>
<td>Immunohematology I</td>
<td>2.0</td>
</tr>
</tbody>
</table>

*First Year includes summer semester.
Course Descriptions for the Master of Science Program

CLSC 5001  Basic Concepts in Immunohematology
2.0 Semester Credit Hours
Topics covered include the essential concepts of primary and secondary hemostasis, the application of principles of genetics and immunology to immunohematology. Selected areas of hematology pathology and the relationship to the transfusion service will be discussed.

CLSC 5002  Immunohematology I: The Donor
2.0 Semester Credit Hours
Topics in this course will include: (1) principles and applications for the preparation, storage, handling of blood components; (2) regulations and quality assurance for the laboratory and donor area; (3) donor qualifications and preparation for routine, autologous, directed, and hemapheresis as well as the principles and applications will be discussed; and (4) routine testing of donor units including testing for agents of infectious disease.

CLSC 5003  Immunohematology Practicum I
4.0 Semester Credit Hours
During this practicum the student will have the opportunity to gain experience in all aspects of blood procurement and preparation of components. Donor selection, serologic testing of units for infectious diseases, processing and component preparation as well as the quality assurance procedures and criteria will be covered. Experience in hemapheresis will be included.

CLSC 5004  Transfusion Medicine
1.0 Semester Credit Hour
Immune mediated and drug induced hemolytic anemias, leukemias, and other clinical conditions which require specialized workup, transfusion therapy and clinical management will be discussed in this course. Diagnosis, treatment and prevention of hemolytic disease of the newborn will be discussed. In addition the general indications for transfusion therapy, the benefits and adverse effects of component transfusion and special transfusion problems are included.

CLSC 5005  Seminar in Education and Management
0.5 Semester Credit Hour
The key concepts of effective management including planning, employee selection and orientation, productivity and performance evaluation will be covered. Students will also study the education theory and techniques necessary for teaching in the clinical environment and for small-group teaching. Lecturing in the undergraduate Clinical Laboratory Science program will be required.

CLSC 5007  Toxicology Practicum
5.0 Semester Credit Hours
One semester rotation through different types of toxicology laboratories including medical examiners, clinical, drug testing. Practicums will be supervised by faculty.

CLSC 5009  Principles of Forensic Sciences
1.0 Semester Credit Hour
An introduction to the basic principles of evidence, investigations and the laws that cover physical evidence and its presentation in court. The course will address principles of investigation and introduction to evidence, types and uses of physical evidence, legal requirements in dealing with physical evidence, survey of forensic

Curriculum for Toxicology Track
The student is required to enroll in courses offered by the Graduate School in the basic sciences, including the core courses, physiology, and pharmacology, as well as specified clinical laboratory science courses. Practicums will be scheduled at various toxicology laboratories throughout the city.

First Year

<table>
<thead>
<tr>
<th>Course</th>
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<tr>
<td>INTD 5005  Biochemistry</td>
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<td>INTD 5064  App. Statistics</td>
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<tr>
<td>NURS 5338  Pathophys. I</td>
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</tr>
<tr>
<td>PHAR 6006  Pharmacology or equivalent such as BIO 5543</td>
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</tr>
<tr>
<td>MICR 5051  Immunology</td>
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Second Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>CLSC 5018  Special Topics in Medical/Forensic Toxicology</td>
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<tr>
<td>INTD 6002  Ethics</td>
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</tr>
<tr>
<td>CLSC 5007  Toxicology Practicum</td>
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<tr>
<td>CLSC 5020  Topics in App. Toxicology</td>
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</tr>
<tr>
<td>CLSC 6097  Research</td>
<td>3.0</td>
</tr>
<tr>
<td>CLSC 6098  Thesis</td>
<td>3.0</td>
</tr>
<tr>
<td>CLSC 5017  Toxicology Seminar</td>
<td>1.0</td>
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<tr>
<td>CLSC 5009  Principles of Forensic Science</td>
<td>1.0</td>
</tr>
<tr>
<td>CLSC 5014  Principles &amp; Applications in Analytical Toxicology</td>
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</tr>
</tbody>
</table>

Electives

Electives will be selected to complement the applicant’s career objectives and to provide the opportunity for requisite knowledge to complete the research project. Suggested courses include CLSC 5036 and CLSC 5037.

Thesis

All students, regardless of track selected, are required to complete a thesis for this degree. The thesis must be related to an existing clinical problem in forensic/analytical toxicology or blood banking/transfusion services or paternity testing. A research advisor will be selected to assist the student in completing the project.
CLSC 5012  Immunohematology II: Human Blood Group Systems
2.0 Semester Credit Hours
Course topics will include discussion and application of genetic, immunologic and biochemical characteristics of the major blood group systems as well as high and low frequency and HTLA antigens. The relationship and significance of these systems to transfusion, transplantation, anthropological studies, and disease association will be covered. Special techniques and problem-solving methods for identification and resolution of typing discrepancies and alloantibody and autoantibody problems will be presented.

CLSC 5013  Immunohematology Practicum II
8.5 Semester Credit Hours
During this practicum the student will have the opportunity to gain experience in all areas/applications of compatibility testing and antibody identification. The use of special techniques for solving complicated immunohematologic problems and multiple antibodies, workup of suspected transfusion reaction, hemolytic disease of the newborn, and resolution of problems caused by autoantibodies will be included. Special transfusions practices for selected patient groups will be included.

CLSC 5014  Principles and Applications in Analytical Toxicology
5.5 Semester Credit Hours
This course will concentrate on major topical areas of toxicology including: mechanisms of toxicity including mutagenicity, teratogenicity, and carcinogenicity; mechanisms of systemic toxicity and damage to specific organ systems; chemical and biochemical analytical techniques including non-instrumental methods such as microdiffusion and instrumental methods such as HPLC and GC/MS; toxicity of toxins, toxicants, narcotics, organic solvents and other classes of materials. Case studies will be used to develop skills in the application of concepts and principles.

CLSC 5017  Toxicology Seminar
1.0 Semester Credit Hour
Formal exchange of scientific information and ideas through presentations from recent scientific literature and from faculty and student research.

CLSC 5018  Special Topics in Medical/Forensic Toxicology
4.0 Semester Credit Hours
Course will concentrate on current knowledge of the various topics in the field of toxicology including natural toxins, drugs of abuse, psychotropic agents, industrial chemical disasters, and the principles of poison management. Other cross-discipline topics will be discussed including forensic serology. Some of the topics may involve some laboratory demonstrations. The use of case studies is an integral part of this course. Course will also cover topics on toxicology laboratory design and certification.

CLSC 5020  Topics in Applied Toxicology
2.0 Semester Credit Hours
This course is designed to complement courses CLSC 5014, 5018, and 5097. Under supervision of the program coordinator and toxicologists from various areas of the discipline, the student will apply her/his knowledge of toxicology and forensic science to solving clinical and forensic cases.

CLSC 5022  Immunohematology III: New Approaches
0.5 Semester Credit Hour
In this course students will have the opportunity to apply genetic, immunological, and biochemical principles to the study of HLA, platelet and granulocyte antigens. The relationship of these systems to transfusion, transplantation, disease association, paternity testing and family studies will be covered. Techniques and use of stem cells, DNA technology and their application to selected areas of transfusion medicine will be included.

CLSC 5023  Immunohematology Practicum III
3.0 Semester Credit Hours
During this practicum the student will have the opportunity to gain experience in specialized applications and areas associated with transfusion medicine including histocompatibility testing for paternity or family studies and for transplantation, cytogenetics, coagulation, and molecular biology.

CLSC 5036  Advanced Molecular and Laboratory Diagnostics — Lecture
3.0 Semester Credit Hours

CLSC 5037  Advanced Molecular and Laboratory Diagnostics — Lab
2.0 Semester Credit Hours
The course is offered as a graduate level course in the Master of Science Program in the Department of Clinical Laboratory Science. The design is intended to give students an in-depth understanding of the role of advanced technology in the diagnosis, treatment, and monitoring of the disease process. Students will have the opportunity to acquire detailed experience in molecular-based diagnostic design and extensive hands-on laboratory experience. The course will include molecular diagnostic techniques, amplification and micro-array technology, Southern/Northern/Western blotting, advanced clinical virology, tissue culture techniques, and advanced instrumentation. Students will have the opportunity to participate in an analysis of clinical cases relevant to the new and innovative technology, individual presentations, and written papers.

CLSC 5040  Laboratory Medicine
3.0 Semester Credit Hours
This course is offered to students in the Physician Assistant Studies Program at UTHSCSA. The course is designed to provide the student with the opportunity to gain information on the profession of CLS including history and job characteristics. Relationships between abnormal physiology and laboratory testing will be emphasized. Basic lab and math statistics will be taught. The majority of the course is Web-based.

CLSC 5041  Laboratory Medicine Laboratory
1.0 Semester Credit Hour
This course is offered to students in the Physician Assistant Studies Program. This is a laboratory course that provides the student with hands-on experience in performing common physician office laboratory procedures. Case studies are used to help students interpret and use laboratory test results.
CLSC 5090  Independent Study in Clinical Laboratory Sciences
1.0–4.0 Semester Credit Hours
This course allows for in-depth study in a specific topic area. Topics and method of study are agreed upon by instructor and student. The course may be repeated for credit when topics vary. Credit to be arranged.

CLSC 6097  Research
3.0 Semester Credit Hours
Supervised research under direction of faculty.

CLSC 6098  Thesis
3.0 Semester Credit Hours
Prerequisite: Admission to candidacy for the Master of Science degree
Instruction in the preparation of a thesis. Registration for at least one term is required of MS candidates.

INTD 5064/OCCT 5023  Applied Statistics for Health Care Practitioners
3.0 Semester Credit Hours
This course focuses on the application of descriptive and inferential statistics in research studies in the health sciences. Students are provided the opportunity to gain a base of knowledge that will enable them to understand, interpret, and evaluate statistical results; work with a consultant statistician; and use statistical software to enter, analyze, and summarize data. Teaching methods include lecture, Web-supported technology, and problem-based learning groups.
DEAF EDUCATION AND HEARING SCIENCE

The Master of Deaf Education and Hearing Science program is offered jointly by the School of Allied Health Sciences and Sunshine Cottage School for Deaf Children. Sunshine Cottage serves as the primary teaching laboratory and physical facility for faculty, students, and staff for the program.

Sunshine Cottage School for Deaf Children is a private organization in San Antonio that provides education for children with hearing impairments from birth through grade 12. It is an auditory-oral school whose mission is to teach children with hearing impairment to develop listening, language, and speech in order to become part of the hearing world and be academically competitive with their hearing peers. Sunshine Cottage is the only full-time, K-12, private school in South Texas that specializes in teaching children with hearing loss exclusively using auditory-oral methods. Sign language is not used nor taught; however, sign language is recognized as a second language if already used.

Master of Deaf Education and Hearing Science Program

The Master of Deaf Education and Hearing Science (MDEHS) program is designed to further the education and training of teachers, speech pathologists, nurses, and others who wish to pursue a career in the education of children with hearing loss through spoken language, using auditory-oral and auditory-verbal methods. The program prepares teachers to work as members of multi-professional teams to address the educational, social, and health needs of children who have hearing loss.

The MDEHS program is designed to be a part-time program to accommodate MDEHS students who are employed. Accredited by the Council on Deaf Education, the program consists of 36 semester credit hours of course work that includes observations, seminars, demonstrations, research opportunities, field trips, and practicum experiences that are scheduled throughout the six-semester program. Practicum assignments are scheduled at Sunshine Cottage, the UTHSCSA, and partnership schools and clinics in the San Antonio area.

Students who successfully complete the course requirements must pass a comprehensive examination covering the major components of the program. A thesis is not required; however, students are required to acquire competency in reading and critically reviewing professional and research literature, and develop awareness of statistical and research design concepts for educational and clinical studies. A research paper, case study, or other significant effort is required in all courses. Oral and written comprehensive examinations are required for graduation.

Application and Admission

Detailed information about application and admission to the MDEHS program is available through the Office of the Dean, School of Allied Health Sciences. The application period begins on September 1 and remains open until the class is filled. Classes begin in the summer semester each year. All required admissions information and documents must be submitted to the Office of the Registrar before an applicant is considered for admission. Because applications and documents are reviewed as they are received, applicants are encouraged to apply early in the application period.

To be admitted to the MDEHS program, applicants must have earned a baccalaureate degree from an accredited college or university, with an overall grade point average of 3.0. Incoming students must hold current certification in elementary or special education, speech pathology, or a related field. Applicants must take the Graduate Record Examination or the Miller Analogies Test and have the score reported to the Office of the Registrar.

Students who are admitted to the MDEHS program are considered for a scholarship to cover tuition and student fees. Further information about the scholarship may be obtained through the Office of the Dean, School of Allied Health Sciences.

The MDEHS program is fully accredited through the Council on Deaf Education, Gallaudet University, 800 Florida Ave. NW, Washington, D.C. 20002-3695, (202) 651-5525 (phone), (202) 651-5749 (fax).

Curriculum

<table>
<thead>
<tr>
<th>First Year</th>
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<tr>
<td><strong>Summer Semester</strong></td>
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<tr>
<td>DEHS 5001 Foundations of Education for the Deaf</td>
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<td>DEHS 5009 Introduction to Sign (ASL &amp; Signed English)</td>
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<tr>
<td>DEHS 5021 Teaching/Management Apprenticeship</td>
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<td>DEHS 5005 Factors in Language and Bilingual Language Development</td>
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<td>DEHS 5003 Speech Mechanisms - Anatomy, Physiology, Acoustics</td>
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<td>DEHS 5011 Language Development and Hearing Ability</td>
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<td>DEHS 6006 Inclusion of the Hearing-Impaired Student</td>
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<td><strong>Summer Semester</strong></td>
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<td>DEHS 6008 Speech for Hearing-Impaired Students</td>
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<td>DEHS 6010</td>
<td>Auditory-Verbal Therapy</td>
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<td>DEHS 6002</td>
<td>Comprehensive Assessment, Counseling, and Manage-</td>
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<td>DEHS 5011</td>
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Semester Total: 5.5

Spring Semester

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<td>Applied Statistics for Health Care Practitioners</td>
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<td>Speech Mechanisms - Anatomy, Physiology, Acous-</td>
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<td>Introduction to Audiology</td>
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<tr>
<td>DEHS 5009</td>
<td>Introduction to Sign (ASL and Signed English)</td>
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<td>DEHS 5011</td>
<td>Language Development and Hearing Ability</td>
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Program Total: 36.0

Course Descriptions

DEHS 5001  Foundations of Education for the Deaf
3.5 Semester Credit Hours
History of the education of the hearing impaired including Deaf Culture and American Sign Language (ASL). Impact of hearing loss on academic access, vocational choice, and personal development. Current trends in academic programming, parent-infant through college, provisions for multicultural populations.

DEHS 5003  Speech Mechanisms - Anatomy, Physiology, Acoustics
2.5 Semester Credit Hours
This course is a study of the component parts of the speech mechanisms and their coordination to permit functional speech; physiology and acoustics of speech; impact of hearing loss on development and maintenance of functional speech skills; and individual assessment procedures. Practicum included.

DEHS 5005  Factors in Language and Bilingual Language Development
2.5 Semester Credit Hours
Provides an introductory overview of acquisition of language by children who may have more than one handicapping condition. People in bilingual families and communities are stressed. Surveys the nature of language development as related to learning theory, communication functions, specific handicapping conditions, culture, assessment and intervention with application to a variety of practice/teaching settings.

DEHS 5007  Introduction to Audiology
3.5 Semester Credit Hours

DEHS 5009  Introduction to Sign (ASL and Signed English)
2.5 Semester Credit Hours

DEHS 5011  Language Development and Hearing Ability
2.5 Semester Credit Hours
Knowledge of normal language and social development and how hearing loss impacts on development. Assessment of present lan-

guage and social levels in hearing impaired children will be compared with the normal language and social developmental guidelines currently in use. Practicum included.

DEHS 6004  Curriculum Development in Deaf Education
2.5 Semester Credit Hours
This course addresses: development and adaptation of curriculum materials and instructional procedures for the child with hearing impairment; selection and writing of objectives; impact of current child practices in the teaching of reading and the language arts; identification of techniques and materials useful in meeting the individual needs of each student; an overview of historical, clinical, legislative, and philosophical issues; various models of family-centered assessment and intervention for the zero-to-three population; and the professional’s role, cultural influences, and staff issues in early intervention, with specific respect to community intervention. Practicum included.

DEHS 6006  Inclusion of the Hearing-Impaired Student
2.5 Semester Credit Hours
Implementation of Texas Essential Knowledge and Skills (TEKS) applied toward education of the hearing-impaired in middle/secondary settings. Logistical consideration in grouping, teacher placement, and development of individual programs.

DEHS 6008  Speech for Hearing Impaired Students
2.5 Semester Credit Hours
This course addresses: physiology and acoustics of speech; impact of hearing loss on development and maintenance of functional speech skills; specific remediation techniques; and assistive technology and current medical procedures that impact the deaf and hearing-impaired. Practicum included.

DEHS 6010  Auditory-Verbal Therapy
1.5 Semester Credit Hours
Auditory-verbal therapy with and without cochlear implants will be highlighted. A course in the development of optimum auditory functioning in a child with hearing impairment. Emphasizes role of family in enhancing the child’s auditory skills. This course leads to a professional certification. Practicum included.
DEHS 6022 Teaching/Management Apprenticeship II
3.5 Semester Credit Hours
Continuation of Teaching/Management Apprenticeship I. Students develop a comprehensive portfolio of their experiences and abilities. Outcomes of their knowledge and skills gained in the program are emphasized.

INTD 5064 Applied Statistics for Health Care Practitioners
3.0 Semester Credit Hours
This course focuses on the application of descriptive and inferential statistics in research studies in the health sciences and health professions education. Students are provided the opportunity to gain a base of knowledge that will enable them to understand, interpret, and evaluate statistical results; work with a consultant statistician; and use statistical software to enter, analyze, and summarize data. Teaching methods include lecture, Web-supported technology, and problem-based learning groups.

Continuation, Probation, Dismissal
All decisions about continuation, probation, or dismissal are based on recommendations from the program’s Committee on Allied Health Studies. Continuation as a student in the Master of Deaf Education and Hearing Science (MDEHS) program depends on the maintenance of a minimum cumulative grade point average (GPA) of 3.0 while enrolled in the program. A student whose cumulative GPA falls below 3.0 is subject to academic probation. While on probation, a student must maintain a B average in those courses for which he/she is registered or be considered for dismissal. A student who receives a grade of D or F in any course is also subject to probation or dismissal. Under no circumstances will a student on probation be awarded a degree.

Estimated Program Costs
Typical annual costs for tuition and fees include: tuition and designated tuition, $1,512; student health insurance, $620; liability insurance, $15; student services fee, $135; student health services fee, $165; library fee, $75; identification fee, $10; parking, $48 (minimum). Costs of textbooks, supplies, and other expenses vary. Students who have current health insurance coverage equivalent to State of Texas requirements may show proof of insurance in lieu of purchasing student health insurance through the University of Texas System contract.
DENTAL HYGIENE

The dental hygienist works as an integral member of a professional health care delivery team, functioning under the general supervision of a dentist in accordance with guidelines and standards established by the American Dental Association as well as by state laws. Employment opportunities for registered dental hygienists are available in general and specialty dental offices, institutional clinics, public health care environments, research institutions, public schools, business, and the armed forces.

Dental Hygiene is a licensed profession, requiring successful completion of the National Board Examination, the Western Regional Examining Board (WREB), and a state Jurisprudence Exam. The National Board, given during the spring semester of the second year, consists of a comprehensive written examination covering dental and dental hygiene sciences, theoretical aspects of patient care, and principles of dental hygiene therapy. The WREB is given prior to graduation and requires a practical demonstration of clinical competence. A Texas License to practice dental hygiene is granted upon successful completion of the Western Regional Board Exam, the National Board Exam, and the Texas Jurisprudence Exam.

The Department of Dental Hygiene offers three programs to prepare Dental Hygienists for a variety of career opportunities. A newly integrated Certificate and BS Degree Program plan provides students with flexible options at entry and exit to pursue either an entry-level certificate or bachelor’s degree during two academic years. Each option has specific general education prerequisite courses that need to be completed before entering the dental hygiene major. A total of 91 semester credit hours (includes general education prerequisites and dental hygiene major) are required to graduate with a Certificate in Dental Hygiene and 124 semester hours for a bachelor’s degree. The two-year certificate program prepares the graduate to become a licensed registered dental hygienist and work as part of a professional health care delivery team, primarily in private practice settings.

The Department also offers a post-degree certificate completion program for graduates of the UTHSCSA and other dental hygiene entry-level programs. Dental hygienists who are not graduates of the UTHSCSA entry-level program will be required to take a minimum of 30 semester credit hours on the UTHSCSA campus. This program requires 124 credit hours to graduate, including 55 hours of general education prerequisites and advanced dental hygiene major courses. Earning a baccalaureate degree provides the graduate with multiple career options, including private practice, education, administration, public health, business, and research. Finally, the Department offers a Master of Science in Dental Hygiene degree that prepares registered dental hygienists for advanced education in dental hygiene teaching, administration, research, and other related areas.

All Dental Hygiene programs are accredited by the Southern Association of Colleges (SACS) and recognized by the United States Department of Education. The Certificate Program also is accredited by the American Dental Association (ADA) Commission on Dental Accreditation (CODA). The Commission on Dental Accreditation may be contacted at (312) 440-2719 or at 211 East Chicago Avenue, Chicago, IL 60611.

Entry-Level Certificate and Bachelor of Science (BS) Degree Programs

The certificate program in Dental Hygiene consists of two academic years of full-time study for a total of 60 semester credit hours. Required courses include basic, dental and social sciences, clinical theory and practice, and community experience. The curriculum combines classroom and laboratory instruction with clinical to develop student skills in comprehensive dental hygiene care such as assessing and charting general and oral health conditions, taking and processing dental radiographs, removing hard and soft deposits from the teeth, applying preventive agents to the teeth surfaces, and educating the patient in the prevention of oral diseases. In addition, infection control methods are taught related to bloodborne pathogens encountered in the dental environment.

The entry-level BS degree consists of two academic years of full-time study for 69 semester credit hours in dental hygiene. Students complete the identical curriculum as the certificate level students, but take three additional advanced dental hygiene courses to complete the dental hygiene undergraduate major. Students wishing to achieve the entry-level BS degree must have completed all of the prerequisite general education courses (55 semester hours) before matriculation into the program.

Admission and Application

Information about admission and application to the Dental Hygiene program is detailed in the Applicant Viewbook of the School of Allied Health Sciences. The admission requirements for the Certificate in Dental Hygiene include 31 semester credit hours of college work in prescribed courses with a grade of C or better. Admission requirements for the Bachelor of Science degree (entry-level) require 55 semester credit hours of college work in prescribed courses with a grade of C or better. Applications should be submitted to the Office of the Registrar by January 15 for admission to the program in the fall semester. Admission is competitive. A maximum of 32 individuals (Certificate and/or BS entry-level) is admitted each year.
## Curriculum

### First Year

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit Hours</th>
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<td>Fall</td>
<td>DENH 3004</td>
<td>Oral Anatomy</td>
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<td>DENH 3023</td>
<td>Intro. To Clinical Theory</td>
<td>3.0</td>
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<tr>
<td></td>
<td>DENH 3006</td>
<td>Preclinical Dental Hygiene</td>
<td>2.0</td>
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<tr>
<td></td>
<td>DENH 3018</td>
<td>Dental Radiography</td>
<td>3.0</td>
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<tr>
<td></td>
<td>DENH 3019</td>
<td>Oral Health Promotion &amp; Disease Prevention</td>
<td>4.0</td>
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</tr>
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<td>Spring</td>
<td>DENH 3033</td>
<td>Structures of the Head/Neck</td>
<td>3.0</td>
</tr>
<tr>
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<td>DENH 3022</td>
<td>Dental Materials/Specialties</td>
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<td>DENH 3035</td>
<td>Medical Management of the Dental Client</td>
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<td>DENH 3020</td>
<td>Clinic I Seminar</td>
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<td>Clinic I</td>
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<td>Periodontics</td>
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<td><strong>16.0</strong></td>
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<td>Summer Session</td>
<td>DENH 3011</td>
<td>Current Issues in Dental Hygiene (BS course only)</td>
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<td>DENH 4091</td>
<td>Independent Study (BS course only)</td>
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<td>DENH 4013</td>
<td>Pharmacology</td>
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<td>Clinic II</td>
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<td>Community Oral Health</td>
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<td>Advances in Periodontics</td>
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<td>Clinic III</td>
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<td>DENH 4019</td>
<td>Current Dental Hygiene Practice</td>
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<td>Introduction to Research</td>
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<td>INTD 4006</td>
<td>Professional Issues</td>
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<td>DENH 3005</td>
<td>Foundations of Health Care Education (BS course only)</td>
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<tr>
<td>Total for Bachelor of Science Program</td>
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### Course Descriptions

**DENH 3004 Oral Anatomy**  
2.0 Semester Credit Hours  
The oral anatomy course is designed to provide the dental hygiene student with instruction in dental terminology and the anatomy of the teeth. Emphasis is placed on clinical considerations of oral anatomy relevant to dental hygiene practice. *Includes one (1) lecture hour and three (3) laboratory hours per week. Lab fee: $4.*

**DENH 3005 Foundations of Health Care Education**  
3.0 Semester Credit Hours  
This course introduces basic principles and techniques used in health care education. Topics include: issues and trends in professional education, principles of adult education, learning styles and motivation, case-based learning, competency-based education, patient and community education, clinical and laboratory instruction, course design, development of lesson plans and learning activities, guidelines for presentation skills, evaluating student performance, and using educational media and software.

**DENH 3006 Preclinical Dental Hygiene**  
2.0 Semester Credit Hours  
This course is an introduction to instrumentation techniques and basic clinical procedures. The course offers an opportunity to develop competency in fundamental clinical skills necessary to engage in patient treatment. This course must be taken concurrently with DENH 3023. *Includes eight (8) clinical hours per week. Lab fee: $10.*

**DENH 3011 Current Issues in Dental Hygiene**  
3.0 Semester Credit Hours  
This course provides students with an introduction to the various functional roles of the dental hygienist. Topics include self-interest inventories; professional and educational qualifications for various career options; resume/curriculum vitae development; interviewing strategies; opportunities to observe professionals in their career roles; and major issues facing the dental and dental hygiene professions, such as new treatment modalities, workforce issues, quality assurance, access to care for special patient populations, and the cost of health care. *Includes three (3) lecture hours per week.*

**DENH 3018 Dental Radiography**  
3.0 Semester Credit Hours  
This course is an introduction to scientific principles of oral radiography including essential terminology, the production and absorption of radiation, X-ray unit function, imaging systems, processing, quality assurance, radiation biology, and protection. This course is designed to emphasize radiation health and protection principles and techniques of intraoral and extraoral radiography, exposing, processing, mounting, and critical evaluation of dental radiographs. Laboratory experience and clinical applications are emphasized. *Includes two (2) lecture hours and three (3) clinical hours per week. Lab fee: $25.*

**DENH 3019 Oral Health Promotion/Disease Prevention**  
4.0 Semester Credit Hours  
This course is an introduction to concepts used in oral health instruction and patient education. Included in the course is the etiology of dental disease, plaque control, oral physiotherapy, methodology of oral health instruction, nutritional counseling, and patient motivational techniques. This course is designed to give the student an opportunity to develop skills which are necessary for teaching patients how to achieve optimal oral health and to offer experience in communication skills for interpersonal, professional, and patient education interaction. The course will also provide an overview of current counseling recommendations to prevent dental and periodontal disease. *Includes four (4) lecture hours per week.*
DENH 3020 Clinic I Seminar
2.0 Semester Credit Hours
Prerequisite: All fall DH I courses
This course presents current theoretical perspectives in which to interpret and expand dental hygiene care. Topics included within the course are cultural diversity, instrument sharpening, communication skills, ultrasonic scalers, and air abrasive polishers. Other topics related to beginning clinical practice are also incorporated. This course must be taken concurrently with DENH 3021. Includes two (2) lecture hours per week.

DENH 3021 Clinic I
3.0 Semester Credit Hours
Prerequisite: All fall courses
This course is a clinical experience in the practical application of patient education and oral prophylaxis techniques. Emphasis will be placed on comprehensive care for the simple patient classifications, including patient assessment, dental hygiene treatment planning, patient education, instrumentation, preventive therapies, and radiographic skills. This course must be taken concurrently with DENH 1045. Includes twelve (12) clinic hours per week. Lab fee: $30.

DENH 3022 Dental Materials/Specialties
3.0 Semester Credit Hours
This course is a study of the materials and adjunct materials used in restorative dentistry and in various other specialty areas of dentistry to fabricate dental appliances and tooth restorations. This course includes lecture and laboratory components designed to help students develop an understanding of the composition, properties, structure, and manipulative variables of dental materials historically used in dentistry as well as the most current materials available. Emphasis is placed on practical, clinical applications of materials; the dental hygienist's role in educating patients regarding these materials; and the techniques for placement of the materials in the oral cavity. Also included is a discussion of the various categories of dental specialties and the materials used by each specialty. Includes two (2) lecture hours and three (3) lab hours per week. Lab fee: $25.

DENH 3023 Introduction to Clinical Theory
3.0 Semester Credit Hours
This course is an introduction to the theory associated with clinical procedures and patient care. Topics include prevention of disease transmission in the dental setting and patient assessment skills such as vital signs, health history, and oral inspection. An introduction to ethics related to the dental setting is incorporated. This course must be taken concurrently with the dental setting. This information is basic to the understanding of the histological changes arising from pathological alterations in the oral cavity. Includes three (3) lecture hours per week.

DENH 3034 Periodontics
3.0 Semester Credit Hours
Prerequisite: Preclinic (course should be taken in same semester as DENH 3021)
This course presents an in-depth study of the basics of periodontics. This course will include, but is not limited to the following: the tissues of the periodontium, clinical assessment of the periodontium, classifications of periodontal diseases, identification of etiologic factors, the relationship of the immune response to the inflammatory process and pathogenesis of periodontal diseases, clinical indices used in periodontics, and systemic factors involved in periodontal diseases. Emphasis is placed on the clinical application of current theory. Includes three (3) lecture hours.

DENH 3035 Medical Management of the Dental Client
2.0 Semester Credit Hours
Prerequisite: Preclinic (course should be taken in same semester as DENH 3021)
This course is an introduction to elements of dental hygiene care as they relate to the treatment planning of special patients and medical emergencies in the dental office. A major portion of the course deals with the prevention, recognition, and management of medical emergencies that occur in the dental office with specific emphasis on systemic disease processes. Includes one (1) lecture hour and three (3) laboratory hours per week. Lab fee: $10.

INTD 4006 Professional Issues
1.0 Semester Credit Hour
This interdisciplinary course will present an overview of ethical issues facing allied health professionals. Topics to be discussed include responsibilities of the health care practitioner, life and death decisions, patient confidentiality, substance abuse, whistleblowing and informed consent. Ethics in research and other critical issues related to health care problems will also be addressed. Collaborative activities and simulated cases will be used to enhance discussion among students. Includes one (1) lecture hour per week.

DENH 4012 Oral Pathology
3.0 Semester Credit Hours
Prerequisite: DENH 3033
This course introduces the principles of human disease including pathogenesis, clinical appearance, and treatment. In certain instances, microscopic features will be discussed if they enhance the understanding of the disease process. A portion of the course is devoted to basic principles of general pathology. The majority of the course is an overview of oral pathology with an emphasis on the dental hygienist's role in the recognition of oral disease. Includes three (3) lecture hours per week.

DENH 4013 Pharmacology
3.0 Semester Credit Hours
This course is designed to provide students with the opportunity to study pharmacology as it relates to clinical dental hygiene. Drug references; prescriptions; drug action; various drug groups prescribed by physicians that affect dental hygiene care, and various drug groups used in dentistry are included for study. Includes three (3) lecture hours per week.
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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Prerequisites</th>
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<td>DENH 4014</td>
<td>Advances in Periodontics</td>
<td>3.0</td>
<td>DENH 3033, DENH 3034</td>
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<td></td>
<td>This course presents the fundamentals of dental practice for the transition from dental hygiene student to practitioner, including basic OSHA regulations and procedures necessary to be an OSHA compliance manager in private practice, maintaining a recall system, interpersonal relationships among members of the dental health team, resume writing and interviewing skills, and computer applications to patient records. Emphasis will be on current issues in dental hygiene practice and on practical approaches to preparing students to enter the private practice setting as a member of the oral health team. Includes two (2) lecture hours per week.</td>
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<tr>
<td>DENH 4015</td>
<td>Clinic III</td>
<td>3.0</td>
<td>DENH 4012, DENH 4022, DENH 4014</td>
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<td>A continuation of DENH 4022 Clinic II, this course provides students the opportunity to incorporate all learning in providing comprehensive dental hygiene care for patients with simple to complex needs with emphasis on more complex cases, gain experience in the practical application of dental hygiene diagnosis, utilize preventive techniques in patient education skills, practice oral prophylaxis techniques including advanced scaling, implement various management techniques for the difficult patient, and improve efficiency and effectiveness in patient care. This course must be taken concurrently with DENH 4020. Includes twelve (12) clinic hours per week. Lab fee: $30.</td>
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<tr>
<td>DENH 4016</td>
<td>Clinic III Seminar</td>
<td>2.0</td>
<td>DENH 4012, DENH 4022, DENH 4014</td>
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<tr>
<td></td>
<td>This course will provide the dental hygiene student with current theoretical perspectives in which to interpret and expand dental hygiene care. Advanced and adjunctive procedures for clients of special populations are presented in seminar format and build upon the basic concepts and skills learned during Preclinical, Clinic I, and II. Knowledge gained will be applied in clinical practice through new skill acquisition and expanded client care options. Professional ethical codes and major contemporary health issues facing the dental hygienist will be presented as well as legal aspects of health care and state Dental Practice Act requirements. This course must be taken concurrently with DENH 4020. Includes two (2) lecture hours per week.</td>
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<tr>
<td>DENH 4017</td>
<td>Community Oral Health Practicum</td>
<td>2.0</td>
<td>DENH 4021</td>
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<td>This course is the continuation of the fall Community Oral Health Course in which students apply public health/health education principles through implementing individual community oral health education projects, and through participating in service-learning activities outside the Dental School setting. Opportunities include rotations in public schools and in public health dental clinics. Emphasis is placed on students interacting with a variety of patients, including the physically and mentally challenged, indigent populations, and geriatric groups. Students gain experience in health education, as well as additional experience in providing clinical preventive services out in the community. Includes eight (8) clinic hours per week in off-campus rotations or community projects.</td>
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<td>DENH 4018</td>
<td>Introduction to Research</td>
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<td>This course presents basic research principles to facilitate reading and reviewing professional and scientific literature, obtaining research information to support current oral health care treatment and preventive procedures, and providing accurate information to their patients. Topics include the role of the dental hygienist in research, basic research terminology, design and methods, sampling techniques, conducting literature reviews, understanding basic statistics, and applying this information to professional dental hygiene practice. Learners will also have the opportunity to develop team building and communication skills within the context of a team project utilizing face-to-face and virtual environments. Includes three (3) lecture hours per week.</td>
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<td>DENH 4019</td>
<td>Current Dental Hygiene Practice</td>
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<td>This course presents fundamentals of dental practice for the transition from dental hygiene student to practitioner, including basic OSHA regulations and procedures necessary to be an OSHA compliance manager in private practice, maintaining a recall system, interpersonal relationships among members of the dental health team, resume writing and interviewing skills, and computer applications to patient records. Emphasis will be on current issues in dental hygiene practice and on practical approaches to preparing students to enter the private practice setting as a member of the oral health team. Includes two (2) lecture hours per week.</td>
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<td>This course is designed to provide the dental hygiene student with current theoretical perspectives in which to interpret and expand dental hygiene care. Advanced and specialized adjunctive procedures are presented in seminar format and build upon the basic concepts and skills learned during Preclinical and Clinic I. Knowledge gained will be applied in clinical practice through new skill acquisition and expanded client care options. Case studies will be presented related to ethical issues encountered in clinical settings. This course must be taken concurrently with DENH 4022. Includes two (2) lecture hours per week.</td>
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<td>DENH 4021</td>
<td>Community Oral Health</td>
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<td>Community Oral Health is a two-semester course. It is the intent of the course to teach the important role of the dental hygienist in the community, and to describe the relationship of community oral health to public health. The course prepares the student to promote oral health and prevent oral disease in the community. The concepts of assessment, planning, implementation, and evaluation phases of community-based programs are taught. During the first semester, the student plans a community oral health education program that is implemented and evaluated during the second semester of this course. Cultural differences, socioeconomic factors, and barriers to health care are discussed in relation to developing preventive programs. Federal and state public health programs are discussed as well as current public health issues. Community oral health programs for vulnerable populations such as indigent, geriatric, and special needs patients are included. Includes three (3) lecture hours per week.</td>
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DENH 4022 Clinic II
3.0 Semester Credit Hours
Prerequisites: DENH 3022, DENH 3035, DENH 3021, DENH 3034

A continuation of DENH 3021 Clinic I, this course provides further opportunity to incorporate all learning in providing comprehensive dental hygiene care for patients with simple to complex needs with an emphasis on moderate cases. In addition, this course provides an opportunity for the student to gain experience in the practical application of dental hygiene diagnosis, utilize preventive techniques in patient education skills, practice oral prophylaxis techniques including advanced scaling, and implement various management techniques for the difficult patient. This course must be taken concurrently with DENH 4020, Clinic Seminar II. Includes twelve (12) clinic hours per week. Lab fee: $30.

DENH 4091 Independent Study
1.0–3.0 Semester Credit Hours
Prerequisite: Permission in writing (form available) of the instructor and program coordinator

Independent reading, research, discussion, project, and/or writing under the direction of a faculty member. May be repeated for credit.

Advancement, Promotion, Dismissal

The Academic Management Team, a subcommittee of the Department of Dental Hygiene, recommends a student’s promotion status based upon:
1. course grades,
2. attendance record,
3. professional behaviors, and
4. psychomotor skill development.

In addition, the Team will assess, on an individual basis, extenuating circumstances that may have affected a student’s progress. The grade of C is the minimum acceptable grade for all courses in the program.

For unconditional advancement, a student must:
1. achieve a minimum grade point average of 2.0 each semester,
2. successfully complete all prescribed courses and semester requirements,
3. earn a grade of at least C in each course, and
4. demonstrate appropriate professional behaviors. In addition, the Team may consider any or all of the areas indicated above.

Students may be conditionally advanced while on probation under the following conditions:
1. the student withdraws from a prescribed course in the curriculum with the approval of the chair, but meets all other conditions for unconditional advancement;
2. the student earns an unacceptable grade* in any required course while enrolled in the Dental Hygiene program;
3. a student receives an I (Incomplete) in any course.

In these instances, the student will be expected to complete coursework within a time frame specified by the Academic Management Team. Or,
4. a student consistently demonstrates unprofessional behavior.

A student who receives an unacceptable grade in any Dental Hygiene or liberal arts course may be required to repeat all or part of the academic year. If a student is required to repeat the academic year, or any portion thereof, the student must earn an acceptable grade in each course in order to remain in the program. The Academic Management Team also may recommend remediation of a course in which an unacceptable grade was earned if recommended by the course instructor. The Academic Management Team, in consultation with the individual course instructor, will determine methods of remediation. These methods will be clearly specified in writing to the student.

Dismissal from the program may be recommended if a student receives an unacceptable grade(s) in:
1. two or more courses in one semester,
2. a course being repeated or remediated,
3. any course taken while in the process of repeating the academic year,
4. any course taken while on probation,
5. any course taken while in part-time status,
6. if her/his GPA falls below 2.0, or
7. demonstrates serious unprofessional behaviors with faculty, staff, peers, or patients.

Estimated Certificate Program Costs

In addition to tuition and required fees, students in the Dental Hygiene Certificate or BS entry-level program must purchase instruments, textbooks, supplies, and uniforms essential to the program.

First Fall Semester
Books & Manuals $400
Instruments & supplies $350
Uniforms $150

First Spring Semester
Books & Manuals $350
Instruments & supplies $160
Uniforms $40

Second Fall Semester
Books & Manuals $275
Instruments & supplies $150

Second Spring Semester
Books & Manuals $125
Instruments & supplies $150
National Board Exam Fee $140
Western Regional Board Exam Fee $700
Bachelor of Science
Degree Completion Program
The Bachelor of Science Degree Completion Program is designed to allow a registered Dental Hygienist who has completed an accredited Certificate or Associate’s Degree program in dental hygiene, the opportunity to complete her or his baccalaureate degree in the field. The dental hygienist with a baccalaureate level of knowledge is expected to be a generalist who is prepared to assume mid-management, consumer advocacy, clinical research, specialized patient care, and educational roles. The students’ education includes subject matter and practical experience intrinsic to these various roles to fully prepare them to interact effectively with society and other health professionals in a competent, collaborative, and ethical manner. The bachelor’s degree allows graduates to assume beginning teaching roles in community college or university settings, work for public health departments or other health care facilities, assume careers in the business fields for oral health care companies, and other similar job opportunities. Salaries vary depending on the career choice.

The baccalaureate degree program in dental hygiene offers the student a curriculum encompassing the arts, humanities, basic and behavioral sciences, and the advanced professional curriculum. Emphasis is on the basic principles of problem-solving and decision-making, critical thinking, communication skills, and ethical behavior with a particular focus on lifelong learning skills that can be applied to a multiplicity of roles and career settings.

Admission and Application
Information about admission and application to the degree program in Dental Hygiene is detailed in the Applicant Viewbook of the School of Allied Health Sciences. In addition to the 55 semester hours of prerequisites, applicants must have earned a GPA no lower than a 2.8 in basic dental hygiene education, successfully completed the Dental Hygiene National Board Examination, and be licensed as a dental hygienist in good standing in the U.S. or Canada. Application is made through the Office of the Registrar by March 1 for fall entry and by October 1 for spring. Twelve students may be admitted each year.

Curriculum
A total of 124 credit hours are required to earn a Bachelor of Science Degree in Dental Hygiene, including 55 semester hours of general education prerequisites, a maximum of 60 semester hours of entry-level dental hygiene courses, and a minimum of 9 semester hours of advanced dental hygiene major courses. Registered Dental Hygienists who are not graduates of the UTHSCSA entry-level program will be required to take a minimum of 30 semester credit hours on the UTHSCSA campus.

Core Courses
- DENH 3005 Foundations of Health Care Education 3.0
- DENH 3011 Current Issues in Dental Hygiene 3.0
- DENH 4091 Independent Study 3.0

9.0

Dental Hygiene Electives
- DENH 3003 Advanced Oral Health Promotion 3.0
- DENH 3007 Preclinical Teaching Practicum 4.0
- DENH 3013 Research Principles and Applications 3.0
- DENH 3015 Public Health Practicum 4.0
- DENH 3017 Clinical Teaching Practicum 3.0
- DENH 4007 Clinical Administration Practicum 4.0
- DENH 4091 Independent Study 1.0–3.0
- DENH 4023 Special Topics 1.0–3.0

*May be repeated for one to three credit hours, depending on student’s course of study

Course Descriptions
DENH 3003 Advanced Oral Health Promotion
3.0 Semester Credit Hours
This is a theory-based course in which oral health will be viewed holistically. Topics will include the evolving profession of dental hygiene, paradigm shifts in dental hygiene, concepts of health and wellness, behavioral foundations for the dental hygiene process, cultural diversity, approaches to health care delivery, and health needs assessment.

DENH 3005 Foundations of Health Care Education
3.0 Semester Credit Hours
This course introduces basic principles and techniques used in health care education. Topics include: principles of learning, learning styles and motivation, collaborative and case-based learning, competency-based education, patient and community education, clinical and laboratory instruction, course design, development of lesson plans and learning activities, guidelines for presentation skills, evaluating learning and instruction, using educational media and software, distance education, professional accreditation, and legal issues in education.

DENH 3007 Preclinical Teaching Practicum
4.0 Semester Credit Hours
This course will provide students with an introduction to concepts of preclinical instruction. Instruction will include seminar and laboratory application sessions emphasizing theories of psychomotor skill development; diagnosis of performance problems; provision of feedback; identification of cognitive, psychomotor, and affective behaviors; and faculty calibration.

DENH 3011 Current Issues in Dental Hygiene
3.0 Semester Credit Hours
This course provides students with an introduction to the various functional roles of the dental hygienist. Topics include self interest inventories; professional and educational qualifications for various career options; resume/cv vitae development; interviewing strategies; opportunities to observe professionals in their career roles; and major issues facing the dental and dental hygiene professions, such as new treatment modalities, workforce issues, quality assurance, access to care for special patient populations, and the cost of health care.
DENH 3013 Research Principles and Applications

3.0 Semester Credit Hours
This course is designed to provide the student with an opportunity to expand research knowledge in two dimensions: principles and applications. The course will consist of an in-depth study of the research process, its contexts, design, data collection, and communication techniques.

DENH 3015 Public Health Practicum

4.0 Semester Credit Hours
This course is an opportunity to gain experience with oral health care delivery or promotion in a public health area. The course will include planning and execution of a project in the student’s individual area of interest.

DENH 3017 Clinical Teaching Practicum

3.0 Semester Credit Hours
This course is an introduction to clinical instruction. Students will have the opportunity to gain experience in identifying and correcting performance problems relating to direct patient care. Instruction will include seminar and a clinical application session emphasizing the instructor’s role as facilitator, role model, and evaluator.

DENH 4007 Clinical Administration Practicum

4.0 Semester Credit Hours
The purpose of this course is to present students with an opportunity to hone administrative skills in a clinical environment. There will be interactions with second-year dental hygiene students as well as with the second-year clinic coordinator. The course includes conference and clinical application sessions to expand and refine teaching and evaluation skills and clinic administration issues including outcomes assessment, quality assurance, and information technology.

DENH 4023 Special Topics

1.0–3.0 Semester Credit Hours
Students will be given an opportunity to gain an in-depth understanding of selected topics through seminars, conferences, projects, or other appropriate learning methods.

DENH 4091 Independent Study

1.0–3.0 Semester Credit Hours
This course includes independent reading, research, discussion, project, and/or writing under the direction of a faculty member. The course may be repeated for credit.

Advancement, Promotion, Dismissal
The Academic Management Team, a subcommittee of the Department of Dental Hygiene, recommends a student’s promotion status based upon (1) course grades, (2) attendance record, (3) professional behaviors, and (4) psychomotor skill development. In addition, the Team will assess, on an individual basis, extenuating circumstances that may have affected a student’s progress. The grade of C is the minimum acceptable grade for all courses in the program.

Costs
Total costs for tuition and fees, parking permits, health and liability insurance, etc. for the Bachelor of Science program are approximately $4,800. This estimate is for students who have not graduated from the entry-level UTHSCSA program and will need to take 30 hours on campus. Students who are enrolled in the entry-level program or return to complete their BS degree will pay normal tuition and fees only for the remaining courses needed to complete their BS degree. Costs for other expenses, such as textbooks, course manuals, and supplies vary with students’ curriculum selections.

Non-resident students are subject to additional tuition costs, which may be found under “Financial Information” in this Catalog.

Master of Science Degree Program
The Master of Science degree builds on a baccalaureate degree in dental hygiene or a related field to develop professionals with expertise in a specialized area of dental hygiene. Through academic courses, independent study, research, and practical experience, graduate students have the opportunity to prepare to meet the demands of an evolving health care environment. The primary goal of graduate education in dental hygiene is to prepare professionals to assume primary leadership roles in clinical, educational, research, political, administrative, and other health care delivery agencies.

The graduate education is delivered within a multidisciplinary framework through the School of Allied Health Sciences, the Dental School, and the Graduate School of Biomedical Sciences. Graduates will have the opportunity to develop competence to conducting research in the body of knowledge specific to dental hygiene and/or areas that impact the health care delivery system to expand the theoretical foundations of the profession and form a foundation for future doctoral study.

Admission and Application
Information about admission and application to the graduate degree program in Dental Hygiene is detailed in the Applicant Viewbook of the School of Allied Health Sciences. Applicants must have earned a GPA no lower than 3.0 in baccalaureate degree studies, and have taken the Graduate Record Examination with a minimum score of 1000 or the Miller Analogies Test with a minimum score of 50. Additionally, applicants must have successfully completed the Dental Hygiene National Board Examination, and hold current licensure as a registered dental hygienist from any state in the United States or Canada. Application is made through the Office of the Registrar before by the deadline of March 1 for the fall semester and October 1 for the spring semester. Admission is offered through the Graduate School of
Biomedical Science’s Dental Hygiene Committee on Graduate Studies. Four to six students are admitted each year.

Curriculum
The professional phase of the master’s degree program includes five to six academic semesters for a minimum of 36 semester hours, including successful completion of a thesis. A part-time option is available, but all work toward the degree should be completed within six years of initial enrollment at UTHSCSA. The curriculum includes nine core courses, with electives chosen from selected courses in the Dental School and the Graduate School of Biomedical Sciences. Specific degree plans are formulated for each student, depending upon her/his interests.

Core Courses
DENH 5005 Foundations of Health Care Education 3.0
DENH 5022 Research Apprenticeship 3.0
DENH 5024 Professional Communication 3.0
DENH 5026 Research Principles and Applications 3.0
DENH 5924 Biostatistics 3.0
INTD 6002 Ethics in Research 0.5
DENH 6098 Thesis 6.0
**21.5**

Dental Hygiene Electives
DENH 5003 Current Issues in Dental Hygiene 3.0
DENH 5007 Clinical Administration Practicum 4.0
DENH 5010 Teaching Internship 3.0
DENH 5015 Public Health Practicum 4.0
DENH 5017 Clinical Teaching Practicum 3.0
DENH 5036 Advanced Oral Health Promotion 3.0
DENH 5091 Special Topics in Dental Hygiene 1.0–3.0
DENH 5903 Organizational Leadership 3.0
DENH 5926 Preclinical Teaching Practicum 4.0
DENH 6091 Independent Study 1.0–3.0

Course Descriptions

DENH 5003 Current Issues in Dental Hygiene 3.0 Semester Credit Hours
This course provides students with an introduction to the various functional roles of the dental hygienist. Topics include self interest inventories; professional and educational qualifications for various career options; résumé/curriculum vitae development; interviewing strategies; opportunities to observe professionals in their career roles; and major issues facing the dental and dental hygiene professions, such as new treatment modalities, workforce issues, quality assurance, access to care for special patient populations, and the cost of health care.

DENH 5005 Foundations of Health Care Education 3.0 Semester Credit Hours
This course introduces basic principles and techniques used in health care education. Topics include: issues and trends in professional education, principles of adult education, learning styles and motivation, case-based learning, competency-based education, patient and community education, clinical and laboratory instruction, course design, development of lesson plans and learning activities, guidelines for presentation skills, evaluating student performance, and using educational media and software.

DENH 5007 Clinical Administration Practicum 4.0 Semester Credit Hours
The purpose of this course is to present students with an opportunity to hone administrative skills in a clinical environment. There will be interactions with second-year dental hygiene students as well as with the second-year clinic coordinator. The course includes conference and clinical application sessions to expand and refine teaching and evaluation skills and clinic administration issues including outcomes assessment, quality assurance, and information technology.

DENH 5010 Teaching Internship 3.0 Semester Credit Hours
This internship will provide graduate students with the opportunity to teach in various clinics, laboratories, and didactic courses to acquire experience in instructing undergraduate students in a variety of situations. The course is arranged on a contractual basis and tailored to meet the individual goals, needs, and interests of each graduate student, while keeping in mind background experiences. Supervision and evaluation of teaching performance is provided by the graduate faculty.

DENH 5015 Public Health Practicum 4.0 Semester credit Hours
This course is an introduction to clinical instruction. The student will have the opportunity to gain experience with oral health care delivery or promotion in a public health area. The course will include planning and execution of a project in the student’s individual area of interest.

DENH 5017 Clinical Teaching Practicum 3.0 Semester Credit Hours
This course is an opportunity to gain experience with oral health care delivery or promotion in a public health area. The course will include planning and execution of a project in the student’s individual area of interest.

DENH 5022 Research Apprenticeship 3.0 Semester Credit Hours
This course allows a graduate to review the literature and to design a research project under the direction of a faculty advisor that leads toward thesis research. Students are expected to design a research proposal that prepares them to collect and analyze data for their future thesis project.

DENH 5024 Professional Communication 3.0 Semester Credit Hours
This course is designed to help the student develop concepts of professional communication including verbal, visual, and writing skills using state-of-the-art communication resources. Within an interactive topic and computer laboratory format, the students is expected to produce a series of scientific writings, abstracts, annotated bibliographies, and a term paper/research report in the form of a review of the literature.
DENH 5026  Research Principles and Applications  
3.0 Semester Credit Hours  
This course is designed to provide the student with an opportunity to expand research knowledge in two dimensions: principles and applications. The course will consist of an in-depth study of the research process, its contexts, design, data collection, and communication techniques.

DENH 5036  Advanced Oral Health Promotion  
3.0 Semester Credit Hours  
This course is a theory-based course in which oral health will be viewed holistically. Topics will include the evolving profession of dental hygiene, paradigm shifts in dental hygiene, concepts of health and wellness, behavioral foundations for the dental hygiene process, cultural diversity, approaches to health care delivery, and health needs assessment.

DENH 5091  Special Topics  
1.0–3.0 Semester Credit Hours  
Students will be given an opportunity to gain an in-depth understanding of selected topics through seminars, conferences, projects, or other appropriate learning methods.

DENH 5903  Organizational Leadership  
3.0 Semester Credit Hours  
The purpose of this course is to present foundational principles and theory relating to organizational leadership, communication strategies and behaviors, management of change, decision-making, and other essential elements of academic leadership and administration. The course will provide students with general information relating to organizational theory and more specific information about how educational organizations are designed and managed within different institutional settings: community colleges, private and public colleges, and universities. Additional topics will include external and internal factors affecting education, administrative roles, leadership and management styles, program planning and implementation, budget and personnel management, faculty and staff development, outcomes assessment, accreditation, and other topics relevant to the student's interests.

DENH 5924  Biostatistics  
3.0 Semester Credit Hours  
This course is an introduction to biostatistics. Emphasis is upon application of statistical methods to biological problems. Topics include descriptive statistics, probability, hypothesis testing, and estimation.

DENH 5926  Preclinical Teaching Practicum  
4.0 Semester Credit Hours  
This course will provide students with an introduction to concepts of preclinical instruction. Instruction will include seminar and laboratory application sessions emphasizing theories of psychomotor skill development; diagnosis of performance problems; provision of feedback; identification of cognitive, psychomotor, and affective behaviors; and faculty calibration.

INTD 6002  Ethics in Research  
0.5 Semester Credit Hour  
This course will deal with topics relevant to ethics in scientific research. The course will be taught on a "case study" basis, dealing with real and hypothetical situations relevant to the conduct of scientific research. Topics discussed will include, but will not be limited to: data management, peer review, recognizing scientific misconduct, authorship, and the University of Texas regulations relevant to human and animal research.

DENH 6091  Independent Study  
1.0–3.0 Semester Credit Hours  
This course includes independent reading, research, discussion, project, and/or writing under the direction of a faculty member. The course may be repeated for credit.

DENH 6098  Thesis  
Variable Semester Credit Hours  
Prerequisite: Admission to candidacy for the M.S. degree  
Completion of an acceptable thesis is required for the Master of Science Degree. Registration in this course for at least one semester is required of all degree candidates.

Advancement, Probation, Dismissal  
The policies for advancement, probation, and dismissal are consistent with those of the Graduate School of Biomedical Sciences. Continuation in the graduate program is dependent upon three requirements:

1. Satisfactory progress in removing any conditions imposed at the time of admission.
2. Maintenance of a minimum cumulative B (3.0) average for all courses taken while enrolled in the Graduate School of Biomedical Sciences. A student whose cumulative grade point average falls below 3.0 will be placed on probation and warned by the Dean of the Graduate School that continuation in the graduate program is in jeopardy. Further information on academic probation may be found in this Catalog.
3. Satisfactory rate of progress toward the degree as determined by the Committee on Graduate Studies. The Committee, with the Dean’s consent, may terminate a student’s enrollment for lack of satisfactory progress.

Estimated Program Costs  
Total costs for in-state tuition and fees, parking permits, health and liability insurance, etc. for the Master of Science program are approximately $5,700. Costs for other expenses, such as textbooks, course manuals, equipment, uniforms or scrubs, and supplies, vary with each student’s curriculum selection. Non-resident students are subject to additional tuition costs, which may be found under “Financial Information” in this Catalog.
DENTAL LABORATORY TECHNOLOGY

Both a certificate program and a Bachelor of Science degree program are offered through the Department of Dental Laboratory Technology. The 21-month certificate program combines classroom instruction with laboratory and practical experience designed to give students the opportunity to develop skill and proficiency. Upon successful completion of the program, the graduate receives a certificate in Dental Laboratory Technology from this institution.

The Bachelor of Science degree in Dental Laboratory Sciences is a four-year program in which applicants may complete the general education and business requirements (preprofessional phase) of the program at any accredited college or university. Preprofessional dental laboratory components may be completed at any ADA-accredited dental laboratory technology program. UTHSCSA offers the dental laboratory sciences component in the professional phase.

The programs in Dental Laboratory Technology are accredited by the American Dental Association, Commission on Dental Accreditation and recognized by the United States Department of Education. The Commission on Dental Accreditation may be contacted at 312/440-2719 or at 211 East Chicago Avenue, Chicago, IL 60611.

Certificate Program

The 21-month certificate program provides instruction in techniques required in the construction of removable, fixed prosthetic, and orthodontic appliances, as well as the fabrication and casting of metal inlays, crowns, bridges, and the processing (preparing, baking, firing, and glazing) of porcelain.

In fabricating the prosthesis in the laboratory, the professional dental technician works from a prescription provided by a dentist. The technician functions in accordance with guidelines and standards established by state law.

Upon certification for graduation, students may take the Recognized Graduate Examination sponsored by the National Board for Certification. Successful completion of this examination is accepted as completion of Part I of the certifying examination in Dental Laboratory Technology.

Dental technicians may find employment through a variety of avenues. Probably the most prevalent is in commercial laboratories, either as employees or as owners of the business. Others are employed in private dental offices, in government civil service positions, in the laboratories of dental supply manufacturers, or in institutional programs.

Admission and Application

Information about admission and application to the Dental Laboratory Technology program is detailed in the Applicant Viewbook of the School of Allied Health Sciences. The admission requirements for the certificate in Dental Laboratory Technology include six (6) semester credit hours of prescribed college courses with a grade no lower than C and successfully pass all three sections of the Texas Academic Skills Program (TASP). Application is made through the Office of the Registrar before June 1 for admission to the program in the fall semester.

Curriculum

First Year

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<th>Semester</th>
<th>Credit Hours</th>
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<td>DELT 1009 Dental Anatomy</td>
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<td>DELT 1012 Complete Dentures I</td>
<td>2.0</td>
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<td>DELT 1013 Complete Dentures I – Lab</td>
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<td>DELT 1016 Fixed Restorative Techniques I – Lec</td>
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Second Year

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</table>
Course Descriptions

DELT 1001 Practical Infection Control
0.5 Semester Credit Hours
This course focuses on the study of the microorganisms relating to infectious diseases and their prevention; emphasis is on the practical application of information to Dental Laboratory Technology techniques and aseptic procedures.

DELT 1005 Chemistry and Physics of Dental Materials
3.5 Semester Credit Hours
This course includes the study of the metallic and nonmetallic materials used in dental laboratory procedures, as well as an introduction to metallurgy and the manipulation and application of all materials in laboratory practice. The physical and chemical properties of materials common to dental technology will be emphasized. Lab fee: $8.

DELT 1009 Dental Anatomy
3.5 Semester Credit Hours
This course is an introduction to tooth morphology and related terminology, including anatomy of the head and neck with emphasis on the structures and functional relationships in the oral cavity. Strong emphasis is placed on both static and functional occlusional relationship. Students will have the opportunity to learn tooth relationship, form, and occlusion and to develop manual dexterity and hand-eye coordination by reproducing tooth form in wax. Students will also be offered an opportunity to learn to reproduce sections of the oral cavity by fabricating gypsum casts. Lab fee: $4.

DELT 1012 Complete Denture I
2.0 Semester Credit Hours
This course serves as an introduction to the fundamental concepts involved in complete denture construction. Lecture topics include: edentulous anatomy, articulators, jaw relations, tooth selection, and denture occlusion.

DELT 1013 Complete Denture I – Lab
1.5 Semester Credit Hours
This course is an introduction to complete dentures laboratory techniques. Emphasis will be placed on the basic requirements in the fabrication of edentulous maxillary and mandibular casts, including construction of custom impression trays, baseplates, wax rims, use of the articulator, setting artificial teeth, and waxing of complete dentures. Lab fee: $4.

DELT 1014 Complete Denture II
2.0 Semester Credit Hours
This course is a continuation of Complete Dentures I, covering the theory and techniques involved in flasking, packing, processing, and finishing of complete dentures. Students will be introduced to the various techniques used in denture repairs, relining, and rebasing dentures. An introduction to esthetic considerations used in arranging characterized anterior teeth. Students will have the opportunity to refine their knowledge in the arrangement of posterior denture teeth, and will be introduced to crossbite relationships, anatomic occlusal schemes, balanced occlusion, and selective grinding procedures.

DELT 1015 Complete Denture II – Lab
1.5 Semester Credit Hours
This course is a refinement and continuation of techniques in complete denture fabrication with an introduction to flasking, packing, processing, and finishing of complete dentures. Students will have the opportunity to refine their skills in arrangement of denture teeth with an introduction to characterized arrangements, crossbite relationships, balanced occlusal schemes, and selective grinding procedures to restore equalized occlusion. Students will be given the opportunity to gain experience in denture repairs and denture relines. Lab fee: $4.

DELT 1016 Fixed Restorative Techniques I – Lecture
2.0 Semester Credit Hours
This course is an introduction to the design and fabrication of fixed appliances, such as full crowns, inlays, and onlays. The course will include appliance design requirements, the properties and safe use of the materials utilized in fixed appliance construction, methods of wax pattern fabrication, flame casting, soldering procedures and materials, and the terminology used in this branch of dentistry.

DELT 1017 Fixed Restorative Techniques I – Lab
1.5 Semester Credit Hours
This course is an introduction to the techniques and procedures used in the fabrication of cast crowns, inlays, and onlays. The course will include various methods of master cast construction, wax application methods, soldering multiunit restorations, investing techniques, casting procedures, and metal finishing. Lab fee: $4.

DELT 1018 Removable Partial I
2.0 Semester Credit Hours
This course is an introduction to the study of the design and fabrication of partial denture frameworks. The course will include concepts and information on surveying, designing, fabricating refractory casts, waxing, spruing, casting, finishing, and polishing partial denture frameworks.

DELT 1019 Removable Partial I – Lab
1.5 Semester Credit Hours
This laboratory course will reflect the practical application of the information and techniques studied in Removable Partial I. This course will include fabricating master casts; surveying, designing, and fabricating refractory casts; waxing, spruing, casting, finishing and polishing; setting of denture teeth; and processing of partial denture frameworks. Lab fee: $4.
DENT 1022 Fixed Restorative II
2.0 Semester Credit Hours
This course serves as a continuation and enhancement of concepts introduced in Fixed Restorative I. This course will introduce the fabrication of porcelain fused to metal restorations. The major areas of study are: porcelain framework design, the chemical and physical properties of dental ceramics, and the basics of aesthetic and functional compatibility with the oral environment. This course builds on the concepts and information imparted to the student in Dental Anatomy, Dental Materials, and Fixed Restorative I.

DENT 1023 Fixed Restorative II – Lab
1.5 Semester Credit Hours
This course will reflect and build upon the concepts learned in Fixed Restorative Techniques I, as well as the Dental Materials and Dental Anatomy courses. Emphasis will be placed on improving waxing skills and exploring the design and fabrication of porcelain fused to metal restorations. Lab fee: $4.

DENT 1026 Removable Partial II
2.0 Semester Credit Hours
Further study of design and fabrication of removable partial denture frameworks is included in this course. Concepts such as wrought wire clasp design, enhanced aesthetic considerations, and the criteria used in selecting and setting various types of artificial teeth will be explored. This course also will present information regarding precision attachments, cast metal bases for complete dentures, the use of stress broken partial dentures, and partial dentures with post retained acrylic tube teeth.

DENT 1027 Removable Partial II – Lab
1.5 Semester Credit Hours
This laboratory course will reflect the concepts learned in Removable Partial Denture Techniques II and build upon the skills and techniques explored in Removable Partial Dentures I. This laboratory course will include soldering techniques; setting teeth on RPD frameworks; flasking, packing and processing a removable partial denture; using wrought wire clasps; cast metal denture base; stress broken partial denture; and mandibular partial denture with post retained acrylic tube teeth. Lab fee: $4.

DENT 1030 Intro. to Dental Laboratory Technology
1.0 Semester Credit Hour
An introduction to Dental Laboratory Technology, this course surveys the development of Dental Technology and Dentistry. Ethics, jurisprudence, dental specialties, and professional and business relations will be explored. The daily operation of the dental laboratory and its equipment, safety procedures, and routine business operations will be emphasized.

DENT 1053 Orthodontics/Pedodontics I – Lecture
2.0 Semester Credit Hours
This course is an introduction to the design and fabrication of orthodontic and pedodontic appliances, such as space maintainers, habit-breaking appliances, and appliances for minor tooth movement. This course includes appliance design, the properties and safe handling of the materials utilized in orthodontic appliance construction, soldering materials and techniques, the types of tooth movement, categories of malocclusion, and the terminology used in this branch of dentistry.

DENT 1054 Orthodontics/Pedodontics I – Lab
1.5 Semester Credit Hours
This course is an introduction to wire bending and acrylicing procedures for the fabrication of orthodontic and pedodontic appliances, such as fixed and removable space maintainers, habit-breaking appliances, and appliances for minor tooth movement. The fundamentals of appliance design and interpretation of work authorizations will be explored. Lab fee: $4.

DENT 2010 Dental Implants
2.0 Semester Credit Hours
The didactic portion of this course will focus on the basic concepts and principles of dental osseointegrated implants. Special topics will include treatment planning, biomechanical, and fabrication techniques. Strong emphasis will be placed on the concept of team approach and the student’s establishing a professional working relationship with the dentist of the various specialties necessary in the total implant treatment process. The laboratory phase will concentrate on identification of component parts and design and fabrication techniques. It will also include the actual hands-on fabrication of some of the basic implant prostheses.

DENT 2024 Fixed Restorative III
2.0 Semester Credit Hours
A continuation and enhancement of concepts introduced in Fixed Restorative II, this course stresses advanced concepts in porcelain construction, shading, and substructure design.

DENT 2025 Fixed Restorative III – Lab
1.5 Semester Credit Hours
Refinements in the fabrication of porcelain bonded to metal restorations, both single and multiunits, will be emphasized. This course will introduce the use of intrinsic and extrinsic color modification with porcelain modifiers and stains. The course includes an introduction to the all-ceramic class of restorations. Lab fee: $4.

DENT 2032 Dental Laboratory Management
4.0 Semester Credit Hours
This course is an introduction to dental laboratory management and the mathematics of operations. This course provides students the opportunity to learn a basic knowledge of management functions in a commercial dental laboratory, such as business mathematics, marketing, accounting, human resources, and finances. Students will have the opportunity to study the correlation of production, compensation, and work ethics necessary to be competitive in the job market.

DENT 2055 Maxillofacial Prosthetics – Lab
0.5 Semester Credit Hour
This course is an introduction to the design and fabrication of maxillofacial prostheses. The course will include an explanation of practical appliance design and the uses of a variety of materials associated with the fabrication processes of these appliances. Lab fee: $4.

DENT 2056 Maxillofacial Prosthetics – Lecture
1.0 Semester Credit Hour
This course is an introduction to the design and fabrication of maxillofacial prostheses. This course includes study of a variety of appliance designs and explores the properties of the materials used in their construction.
DELT 2063  Selective I – Lecture
1.5 Semester Credit Hours
This course includes lectures and discussions designed to reinforce and advance the student’s knowledge of techniques and procedures which were achieved in the basic or general areas. Satisfactory completion of the preceding term is prerequisite.

DELT 2064  Selective I – Lab
3.5 Semester Credit Hours
This course focuses on both preclinical and clinical techniques in a selected specialty area. Emphasis includes the reinforcement and advancement of the theory and procedures learned in prerequisite courses. Emphasis is placed on quality and productivity improvement in this phase of training. The student will be exposed to more advanced techniques in her or his respective specialty area. In some instances, the student will be allowed to fabricate actual patient cases. Lab fee: $4.

DELT 2065  Selective II – Lecture
1.5 Semester Credit Hours
This course includes lectures and discussions designed to reinforce and advance the student’s knowledge of techniques and procedures which were achieved in the basic or general areas. Satisfactory completion of the preceding term is prerequisite.

DELT 2066  Selective II – Lab
3.5 Semester Credit Hours
This course focuses on both preclinical and clinical techniques in a selected specialty area. Emphasis includes the reinforcement and advancement of the theory and procedures learned in prerequisite courses. Emphasis is placed on quality and productivity improvement in this phase of training. The student will be exposed to more advanced techniques in her or his respective specialty area. In some instances, the student will be allowed to fabricate actual patient cases. Lab fee: $4.

DELT 2067  Orthodontics/Pedodontics II – Lecture
1.0 Semester Credit Hour
This course builds upon and extends beyond the concepts introduced in Orthodontics/Pedodontics I. Efforts will be directed to advancing the student’s understanding of appliance design requirements and the properties and uses of the materials from which they are constructed. New materials to be discussed include thermoplastic polymethyl methacrylate, heat treatable orthodontic wire, and light-cured urethane dimethacrylate.

DELT 2068  Orthodontics/Pedodontics II – Lab
1.5 Semester Credit Hours
This course is designed to build on the concepts and principles covered in Orthodontics/Pedodontics I, Lecture and Laboratory. New material to be introduced will include the fabrication of various fixed and removable appliances and methods of appliance repair. New materials to be utilized include light-cured acrylic and thermoplastic materials. Lab fee: $4.

DELT 2072  Preceptorship Lecture/Seminar
1.5 Semester Credit Hours
This seminar presents topics relevant to commercial dental laboratory and clinical practices including dental materials and their application and selection. An overview of dental equipment and laboratory techniques also will be included. The student will be expected to share her/his clinical/laboratory preceptorship experiences and to discuss the various philosophies of their respective clinical sites. Satisfactory completion of the all other terms is prerequisite.

DELT 2073  Preceptorship Clinical/Lab
8.5 Semester Credit Hours
This course focuses on both preclinical and clinical techniques in a selected specialty area which includes reinforcement of techniques and procedures which were achieved in the basic or general areas. Under the supervision of clinical and/or assigned faculty, students have the opportunity to gain expertise and confidence working in the clinical/laboratory setting. Students will be allowed to study and execute routine dental laboratory procedures designed to enhance their knowledge and skills. Particular emphasis will be placed on quality and productivity improvement in this phase of training. Students will be exposed to advanced techniques, as well as state-of-the-art technology in their respective specialty areas. Whenever possible, the students will be able to fabricate actual patient cases and, in some situations, team with dental students or dental faculty in the fabrication of specific prosthetic appliances. Satisfactory completion of the all other terms is prerequisite.

DELT 2090  Special Topics
1.0–3.0 Semester Credit Hours
This course will be arranged through department faculty. The course topics vary according to student interest. Semester hours are variable and credit hours will be assessed per topic. Could be offered any time during the second year (DLT II)—fall, spring, or summer.

DELT 2091  Dental Laboratory Technical Seminar
1.0 Semester Credit Hour
This course is a comprehensive review and analysis of all DELT basic sciences and techniques courses. Lectures and discussions designed to reinforce the basic knowledge of techniques and procedures which were achieved in the basic or general areas as well as areas of special concentration, will be conducted.

**Advancement, Probation, Dismissal**
A student who withdraws from a prescribed course with the permission of the Department Chair, or who receives an I (Incomplete) in any course, may advance on probation into the next semester if he or she has maintained a grade point average of at least 2.0 in the courses completed. The student will be required to finish incomplete work or to enroll in courses which were dropped under conditions which will be determined by the Committee on Allied Health Studies. A student who earns a grade of D or F in any DELT course but who is otherwise in good standing may, with the approval of the Committee on Allied Health Studies, be allowed one opportunity to repeat that course under conditions imposed by the Committee. A maximum grade of C is assigned for successful completion of courses repeated. The opportunity to repeat one or more courses is dependent upon space availability and cannot be guaranteed. If, in the judgement of the Committee on Allied Health Studies, it is impractical for a student to attempt to rectify deficiencies through the mechanism described above,
he or she may be required to repeat the academic year in part or in entirety. A student who fails two or more courses in one semester or who fails a course being repeated is subject to dismissal from the program. If at the end of any semester/term a student’s overall grade point average is below 2.0, he or she may be allowed, at the discretion of the Committee on Allied Health Studies, to continue on scholastic probation. In such cases, the student will receive official notification of probationary status. Permission for a student on probation to advance to a subsequent semester/term is subject to the review and approval of the Committee on Allied Health Studies which may impose certain stipulations on continuation.

Estimated Program Costs
Total costs of the certificate program for tuition and fees, parking permits, health and liability insurance, etc., are approximately $8,000. In addition, costs for other expenses, such as textbooks, course manuals, equipment, uniforms or scrubs, professional examination, and supplies, are approximately $3,500* for the entire program. Non-resident students are subject to additional tuition costs, which may be found under “Financial Information” in this Catalog.

Bachelor of Science Degree Program
The Bachelor of Science degree program in Dental Laboratory Sciences is divided into a preprofessional phase and a professional phase. General education and business courses in the preprofessional phase, may be completed at any regionally accredited college or university. The dental laboratory component of the preprofessional phase may be completed at any dental laboratory technology program accredited by the American Dental Association (ADA). The professional phase, comprised of dental laboratory technology courses and laboratories, is offered at UTHSCSA.

Graduates of the Bachelor of Science in Dental Laboratory Sciences program receive education and training to practice on the technologist level. The dental laboratory technologist provides managerial/supervisory services for the laboratory and exhibits advanced knowledge and skills in the laboratory aspects of dentistry—fabricating dentures, crowns, bridges, implants, and maxillofacial and orthodontic appliances. In addition, the dental laboratory technologist may utilize specialized knowledge and training to address the administrative requirements of the commercial dental laboratory.

Serving in the capacity of personnel supervisor, the dental laboratory technologist manages all aspects of the fabrication of oral prostheses, including job assignments, lab procedures, personal training, infection control, materials and equipment maintenance, and quality control. In the role of laboratory manager, the laboratory technologist applies advanced skills and knowledge in the areas of accounting, marketing, customer relations, product pricing, etc. Pursuit of a bachelor’s degree in dental laboratory sciences gives the student the opportunity to expand those skills necessary to operate a successful dental laboratory.

Admission and Application
Information about admission and application to the bachelor’s program is detailed in the Applicant Viewbook of the School of Allied Health Sciences. Admission requirements for the professional phase of the Bachelor of Science degree program include 91.5 semester credit hours that combine general education, dental laboratory, and business requirements. At least 67.5 of these credit hours in specified dental laboratory technology courses must be completed before being admitted to the professional phase; the remainder may be taken concurrently with the professional phase. Requirements must be completed with a minimum GPA of 2.0. Some dental laboratory courses may be challenged by examination, and credit may be given for professional experience. For further information about admission requirements, see the Applicant Viewbook insert for the Bachelor of Science. Application to the professional phase is made through the Office of the Registrar before the deadline of June 1.

Challenge Examinations and/or Credit for Professional Experience
Some dental laboratory course requirements in the preprofessional phase and laboratory skills requirements in the professional phase may be challenged by examination for credit. Also, credit may be granted for experience alone—individuals with field experience and/or individuals who have attended nonaccredited dental technology programs may satisfy some of the program’s requirements. Up to 8 semester credit hours of professional phase coursework and 25.5 semester hours of preprofessional phase dental laboratory work can be challenged. Individual requests for credits will be evaluated on a case-by-case basis only, and must be submitted in writing for approval prior to registration.

Curriculum
Preprofessional Phase Requirements
The Bachelor of Science in Dental Laboratory Sciences program requires a minimum of 91.5 semester credit hours of prescribed coursework as outlined in the Applicant Viewbook of the School of Allied Health Sciences.

Professional Phase Requirements
The professional phase of the program, junior and senior years, is completed at UTHSCSA. This phase requires 46

* Students are required to wear protective eye wear in the clinics. Although glasses must meet certain requirements, cost depends upon individual needs and preferences.
semester credit hours of prescribed upper-division coursework, including electives. Electives are offered during the fourth year of the program.

### Junior Year

#### Fall Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>DELT 3001</td>
<td>Introduction to Dental Laboratory Management</td>
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<tr>
<td>DELT 3005</td>
<td>Laboratory Skills I</td>
<td>4.0</td>
</tr>
<tr>
<td>DELT 3020</td>
<td>Human Resources Management I</td>
<td>3.0</td>
</tr>
<tr>
<td>DELT 3032</td>
<td>Dental Laboratory Production Systems</td>
<td>3.0</td>
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<tr>
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<td>Laboratory Skills II</td>
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<td>DELT 3021</td>
<td>Human Resources Management II</td>
<td>3.0</td>
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<tr>
<td>DELT 3030</td>
<td>Marketing Dental Laboratory Services</td>
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</tr>
<tr>
<td>DELT 3031</td>
<td>Financial Issues in the Dental Laboratory</td>
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### Senior Year

#### Fall Semester

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<td>DELT 4005</td>
<td>Laboratory Skills III</td>
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<tr>
<td>DELT 4007</td>
<td>QA and QC: Problem Solving Seminar</td>
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<tr>
<td>Electives</td>
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</tr>
<tr>
<td>DELT 3013</td>
<td>Development of Educational and Training Programs (Elective)</td>
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<tr>
<td>DELT 4008</td>
<td>Practice Dental Management I</td>
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<tr>
<td>DELT 4021</td>
<td>Internship in Dental Laboratory Production Operation</td>
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<td>DELT 4022</td>
<td>Internship in Dental Laboratory Administration</td>
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<tr>
<td>DELT 4092</td>
<td>Independent Study in Dental Laboratory Production Operation</td>
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<td>DELT 4093</td>
<td>Independent Study in Dental Laboratory Administration</td>
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<tr>
<td>DELT 4091</td>
<td>Independent Study</td>
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<tr>
<td>DELT 4013</td>
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<td>DELT 4015</td>
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<td>Electives</td>
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<tr>
<td>DELT 4009</td>
<td>Practice Dental Management II</td>
<td>6.0</td>
</tr>
<tr>
<td>DELT 4913</td>
<td>Internship in Development of Educational and Training Programs (Elective)</td>
<td>4.0</td>
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<tr>
<td>DELT 4914</td>
<td>Dental Laboratory Administration Seminar (Elective)</td>
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</tr>
<tr>
<td>DELT 4915</td>
<td>Dental Laboratory Production Operation Seminar (Elective)</td>
<td>4.0</td>
</tr>
<tr>
<td>DELT 4091</td>
<td>Independent Study (Optional)</td>
<td>1.0–3.0</td>
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<tr>
<td></td>
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### Course Descriptions

**DELT 3001 Introduction to Dental Laboratory Management**

*3.0 Semester Credit Hours*

This course introduces students to key theoretical and practical management issues such as management principles, functional activities, and problems related to managing a dental laboratory. Class projects focus on planning and organization issues. Utilization of software programs will be discussed.

**DELT 3005 Laboratory Skills I**

*4.0 Semester Credit Hours*

This is the first of a series of four laboratory skills courses. Theoretical foundations underpinning the production of prosthetic devices will be reviewed in this lecture/laboratory course. Course content includes the study of composition, as well as properties of dental materials and how these materials interact with the environment in which they are used. Laboratory projects provide students with opportunities to maintain their technical skills. *Lab fee: $4.*

**DELT 3013 Development of Educational and Training Programs (Elective)**

*5.0 Semester Credit Hours*

Students are introduced to the theoretical and practical aspects of developing educational and training programs. Course topics include: analyzing training needs, designing instruction, developing instructional materials, evaluating instructional media, developing training documentation, and educational consulting.

**DELT 3015 Laboratory Skills II**

*4.0 Semester Credit Hours*

Prerequisite: DELT 3005

This course is a continuation of Laboratory Skills I. Students are provided an opportunity to expand their understanding of theories underlying laboratory processes and maintain technical proficiency in the production of prosthetic appliances. *Lab fee: $4.*

**DELT 3020 Human Resources Management I**

*3.0 Semester Credit Hours*

Prerequisite: DELT 3020

Course focus includes personnel administration in the dental laboratory setting and the environment in which it functions. The course will present issues of managing human resources at the supervisory level, in addition to reviewing current legislation affecting the personnel function. The course will examine various types of compensation packages designed to retain quality technicians while containing labor costs.

**DELT 3021 Human Resources Management II**

*3.0 Semester Credit Hours*

Prerequisite: DELT 3020

Course focus includes personnel administration in the dental laboratory setting and the environment in which it functions. The course will present issues of managing human resources at the supervisory level, in addition to reviewing current legislation affecting the personnel function. The course will examine various types of compensation packages designed to retain quality technicians while containing labor costs.

**DELT 3030 Marketing Dental Laboratory Services**

*3.0 Semester Credit Hours*

This course addresses the dentist/technician relationship, as well as the development and implementation of a dental laboratory marketing plan. Emphasis will be placed on competitive fee-setting strategies and establishing effective credit and collection policies.
DELT 3031  Financial Issues in the Dental Laboratory
3.0 Semester Credit Hours
Cash management and creative financing for laboratories will be covered to address those specific financial issues that historically have proven to be problematic for laboratory managers. Emphasis will be placed on planning, budgeting, tax responsibilities, credit, and collections. This course will also address record keeping and financial cost accounting for a dental laboratory operation.

DELT 3032  Dental Laboratory Production Systems
3.0 Semester Credit Hours
This course will focus on developing fabrication and production systems for the small, medium, and large dental laboratories. Course content will address areas such as facilities layout, cost reduction strategies, production flow, and problems associated with the economical production of high quality with high production through the efficient use of technical resources.

DELT 4005  Laboratory Skills III
4.0 Semester Credit Hours
Prerequisites: DELT 3005 and DELT 3015
This course is a continuation of Laboratory Skills II. Primary course goals include developing problem-solving and troubleshooting skills and enhancing technical proficiency of prosthetic devices. The number of projects, level of difficulty, and time constraints will increase to reflect the expected level of expertise for a senior student in this program. Increased emphasis will be placed on “doing,” as reflected by the course objectives. Lab fee: $4.

DELT 4007  Quality Assurance (QA) and Quality Control (QC): Problem Solving Seminar
1.0 Semester Credit Hour
Total Quality Management will be a major focus of this course, as well as critical analysis of laboratory management systems as they relate to clinical, technical, and production problems. Special emphasis will be placed on the historical, competitive, and economic aspects of Total Quality Management in the cycle of dental services.

DELT 4008  Practice Dental Management I
6.0 Semester Credit Hours
This course addresses the business administration aspects of managing a dental laboratory. It is a series of lectures and discussions, coupled with practical experience in a laboratory work setting. This section will focus specifically on the practical application of the administrative functions necessary to manage a successful dental laboratory business.

DELT 4009  Practice Dental Management II
6.0 Semester Credit Hours
This course addresses managing technical production in a dental laboratory. It is a series of lectures and discussions, coupled with practical experience in a laboratory work setting. This section will focus on issues such as quality control systems, technical problem solving, state of the art technologies, and the effective management of production resources.

DELT 4013  Safety and Health Management
2.0 Semester Credit Hours
This course presents regulatory and compliance issues as they relate to safety and health in the dental laboratory. Emphasis is placed on setup, administration, and evaluation of exposure control and hazard communication programs.

DELT 4015  Laboratory Skills IV
4.0 Semester Credit Hours
Prerequisites: DELT 3005, DELT 3015, and DELT 4005
This is the last in the series of laboratory skills courses. It is designed to help students maintain their proficiency in the production of prosthetic devices. Students will be required to explain comprehensive case management in an oral presentation of the case and treatment alternatives. Major emphasis will be placed on establishing and maintaining dental team relationships. Lab fee: $4.

DELT 4021  Internship in Dental Laboratory Production Operation (Elective)
5.0 Semester Credit Hours
Prerequisites: DELT 3032, DELT 4007, and/or practical experiences in dental production operation; departmental approval
Students will be provided an opportunity to work in a dental laboratory production operation that will permit them to apply and/or compare the theories studied in the classroom.

DELT 4022  Internship in Dental Laboratory Administration (Elective)
5.0 Semester Credit Hours
Prerequisites: DELT 3001, DELT 3021, DELT 3030, DELT 3031, and/or practical experiences in dental administration; departmental approval
Students will be provided an opportunity to work in a dental laboratory administrative management setting which will permit them to apply and compare the theories studied in the classroom.

DELT 4090  Special Topics
1.0–3.0 Variable Semester Credit Hours
This course will be arranged through department faculty. The course topics vary according to student interest. Semester hours are variable and credit hours will be assessed per topic. Could be offered any time during the fourth year (DLT IV)—fall, spring, or summer.

DELT 4091  Independent Study (Optional)
1.0–3.0 Variable Semester Credit Hours
Prerequisites: Permission (in writing) from the instructor and department chair
Independent reading, research, discussion, and/or writing under the direction of a faculty member. This course is for students seeking specialized work and may be repeated for credit.

DELT 4092  Independent Study in Dental Laboratory Production Operation (Elective)
5.0 Semester Credit Hours
Prerequisites: Practical experience in dental production operation and permission (in writing) from the instructor and department chair
This course is designed for the student who can document at least five years practical experience in management. Course activities include independent reading, writing, and research of special problems under the direction of a faculty member. Students will share related actual and/or simulated problem situations.
DELT 4093  Independent Study in Dental Laboratory Administration (Elective)
5.0 Semester Credit Hours
Prerequisites: Practical management experience in dental administration and permission (in writing) from the instructor and department chair
This course is designed for the student who can document at least five years of practical experience in management. Course activities include independent reading, writing, and research of special problems under the direction of a faculty member. Students will be required to develop and present case studies on actual and/or simulated problem situations.

DELT 4913  Internship in Development of Educational and Training Programs (Elective)
4.0 Semester Credit Hours
Prerequisites: DELT 3013 and departmental approval
Students will have an opportunity to intern in a dental laboratory teaching and/or training environment, which will permit them to apply and compare the theories studied in the classroom.

DELT 4914  Dental Laboratory Administration Seminar (Elective)
4.0 Semester Credit Hours
Prerequisites: DELT 4022 or DELT 4093 and/or practical experiences in dental administration; departmental approval
Students will have the opportunity to participate in problem-oriented discussion sessions designed around simulated and/or actual case experiences. Decision-making, critical-thinking, and communication-skills exercises will be integrated into these shared-experience sessions.

DELT 4915  Dental Laboratory Production Operation Seminar (Elective)
4.0 Semester Credit Hours
Prerequisites: DELT 3032, DELT 4007, DELT 4092, and/or practical experiences in dental production operation; departmental approval
Students will have the opportunity to participate in problem-oriented discussion sessions designed around simulated and/or actual case experiences. Decision-making, critical-thinking, and communication-skills exercises will also be integrated into these shared experience sessions.

DELT 4093  Independent Study in Dental Laboratory Administration (Elective)
5.0 Semester Credit Hours
Prerequisites: Practical management experience in dental administration and permission (in writing) from the instructor and department chair
This course is designed for the student who can document at least five years of practical experience in management. Course activities include independent reading, writing, and research of special problems under the direction of a faculty member. Students will be required to develop and present case studies on actual and/or simulated problem situations.

DELT 4913  Internship in Development of Educational and Training Programs (Elective)
4.0 Semester Credit Hours
Prerequisites: DELT 3013 and departmental approval
Students will have an opportunity to intern in a dental laboratory teaching and/or training environment, which will permit them to apply and compare the theories studied in the classroom.

DELT 4914  Dental Laboratory Administration Seminar (Elective)
4.0 Semester Credit Hours
Prerequisites: DELT 4022 or DELT 4093 and/or practical experiences in dental administration; departmental approval
Students will have the opportunity to participate in problem-oriented discussion sessions designed around simulated and/or actual case experiences. Decision-making, critical-thinking, and communication-skills exercises will be integrated into these shared-experience sessions.

DELT 4915  Dental Laboratory Production Operation Seminar (Elective)
4.0 Semester Credit Hours
Prerequisites: DELT 3032, DELT 4007, DELT 4092, and/or practical experiences in dental production operation; departmental approval
Students will have the opportunity to participate in problem-oriented discussion sessions designed around simulated and/or actual case experiences. Decision-making, critical-thinking, and communication-skills exercises will also be integrated into these shared experience sessions.

Advancement, Probation, Dismissal
Unconditional advancement in the Bachelor of Science in Dental Laboratory Sciences degree program requires completion of the scheduled requirements each semester with no grade lower than a C and a minimum cumulative GPA of 2.0.

A grade of F in any course may be cause for academic dismissal, pending review by the Committee on Allied Health Studies for Dental Laboratory Technology Education and approval of the Dean of the School of Allied Health Sciences. The Committee may recommend that the student receive other corrective action such as placement on a modified curriculum, repetition of a course when next offered, repetition of the academic year/semester, or other actions deemed appropriate.

A grade of D in any course or a GPA below 2.0 causes a student to be placed on academic probation. A student on academic probation who earns an unsatisfactory grade (D, F, or U) in any course during a probationary semester, or fails to maintain a GPA of at least 2.0, may be subject to academic dismissal upon recommendation of the Committee on Allied Health Studies and approval of the Dean of the School of Allied Health Sciences. Unsatisfactory grades must be corrected by successful remediation or retaking of the course. A maximum grade level of C may be earned for a remediated or retaken course. A student placed on a modified curriculum remains on scholastic probation until all academic deficiencies are corrected and the student is able to return to the standard curriculum.

A student who earns more than one unsatisfactory grade during any one semester may be subject to academic dismissal.

A student who receives an I (Incomplete) in any course may advance on scholastic probation with the approval of the Committee on Allied Health Studies.

Placement in laboratory practicum sites requires satisfactory (C or better) completion of all theory and skills courses.

Estimated Program Costs
Total costs of the Bachelor of Science program (professional phase) for tuition and fees, parking permits, health and liability insurance, etc., are approximately $6,100. In addition, costs for other expenses, such as textbooks, course manuals, equipment, uniforms or scrubs, professional examination, and supplies, are approximately $2,000 for the entire program. Non-resident students are subject to additional tuition costs, which may be found under “Financial Information” in this Catalog.
The Profession
Paramedics and EMTs have fulfilled prescribed requirements by a credentialing agency to practice the art and science of out-of-hospital medicine in conjunction with medical direction. Through performance of patient assessments and providing medical care, their goal is to prevent and reduce mortality and morbidity due to illness and injury. Paramedics primarily provide care to emergency patients in an out-of-hospital setting.

Paramedics possess the knowledge, skills, and attitudes consistent with the expectations of the public and the profession. Paramedics recognize that they are an essential component of the continuum of care and serve as linkages among health resources. Paramedics strive to maintain high-quality, reasonable-cost health care by delivering patients directly to appropriate facilities. As an advocate for patients, paramedics seek to be proactive in affecting long term health care by working in conjunction with other provider agencies, networks, and organizations.

The emerging roles and responsibilities of the Paramedic include public education, health promotion, and participation in injury and illness prevention programs. As the scope of service continues to expand, the Paramedic will function as a facilitator of access to care, as well as an initial emergency medical treatment provider.

Paramedics are responsible and accountable to medical direction, the public, and their peers. Paramedics recognize the importance of research and actively participate in the design, development, evaluation, and publication of research. Paramedics seek to take part in lifelong professional development and peer evaluation, and assume an active role in professional and community organizations.

Educational Programs
The Emergency Medical Technology (EMT) Department is a member of the School of Allied Health Sciences and offers Certificate Programs for EMTs that meet or exceed the national standard curriculum. A Bachelor of Science Degree Completion Program in Emergency Health Sciences enrolled its first students in the fall of 2001. The paramedic program is nationally accredited by the Committee on Accreditation of Educational Programs for the EMS Professions. (CoAEMSP), 1248 Harwood Road, Bedford, Texas, 76021-4244, and by the Texas Department of Health, Bureau of Emergency Medical Services, 1100 W. 49th Street, Austin, Texas, 78756-3199.

The Department of Emergency Medical Technology offers interested students two ways to gain EMS education: initial certification courses or a bachelor of science degree in Emergency Health Sciences.

Initial Certification Courses in Emergency Medical Technology
There are two levels of certification training offered by the Department:

EMT-Basic
Classroom instruction covering Basic Life Support knowledge and skills criteria, and clinical and field internship. Successful completion of the course requirements helps prepare the student for the Texas Department of Health, or the National Registry of EMT certification exam.

EMT-Paramedic
Classroom instruction covers anatomy, physiology, patient assessment, advanced airway shock/trauma management, cardiovascular disease, recognition and management, advanced treatment protocols for trauma, medical and special patient emergencies, and clinical and field internship. Successful completion of the course requirements helps prepare the student for the TDH EMT-Paramedic or NREMT-Paramedic certification exam.

Note: EMT-Basic certified applicants wishing to obtain only EMT-Intermediate certification may enroll in EMSP 1256, 1455, 1461, and 1538. After successful completion of these courses, students may apply for state or National Certification at the EMT-Intermediate Level.

Receiving Credit-by-Examination or by Professional Experience
The Department of EMT allows certified/licensed EMS personnel to obtain college credit for EMT-Basic through Paramedic coursework obtained from a non-credit-granting agency or institution by credit-by-examination. The examination typically consists of the final written examination from the corresponding course and/or a verification of skills proficiency, and/or a verification of previous professional experience. The basis for this is a demonstrated knowledge base and skills proficiency in the course of study specified in the EMT-B or EMT-P National Curriculum studied or experienced by the students desiring to receive credit by examination or experience.

The student must complete a UTHSCSA application that must be submitted to the Registrar’s Office and be accepted by the DEMT Program and the Registrar. If the student fails a challenge examination/evaluation, they can enroll in and attend a full course only during regularly scheduled DEMT course offerings in order to otherwise receive credit.

Procedure for Obtaining Credit-by-Examination
1. If you obtained your EMS certification course (non-credit) through the UTHSCSA in 2000 or after:
   a. Notify the Registrar and the DEMT you desire a Credit-by-Examination enrollment.
   b. Contact the Department of EMT who will verify
past enrollment and assign a Pass or Fail grade for each course.

2. If you obtained your EMS certification course through UTHSCSA in 1999 or before, or you obtained your EMS certification courses through another agency or institution:
   a. Contact the Department of EMT who will verify past enrollment and, if applicable, schedule an examination date. A written examination covering the objectives for the challenged course will be given. Previous professional employment can potentially be accepted for EMSP 1461 and 2461 (EMT Clinical Courses) and will be reviewed on an individual basis by the course directors and the Curriculum Committee.
   b. For previous students of the UTHSCSA Special Operations Forces 18D Medics/Paramedic Bridge Program, special arrangement for examinations can be made with authorized testing centers to proctor the required examinations. Contact the Department of EMT for arrangements. Out-of-state tuition may apply for these students. Contact the Registrar for more information.

3. All credit hours awarded will be certified by the Course Director, reviewed with the DEMT Curriculum Committee, and recommended for approval by the Medical Director and Chair of the DEMT. The Registrar will note the credit hours awarded on the student’s transcript.

Admission Requirements
Admission to the emergency medical technology program is competitive.

TASP Test
The TASP Test is not required for EMT enrollment.
Requirements for entry into the EMT-Basic course are:
• Applicants must be 18 years of age or older
• Must have a high school diploma or GED
Requirements for entry into the EMT-Paramedic course are:
• Applicants must be 18 years of age or older
• Must have a high school diploma or GED
• Must be currently state or nationally certified as an EMT-Basic

Application Procedure
Applications for admission to the Emergency Medical Technology Program may be obtained by calling Allied Health Admissions, Office of the Registrar at (210) 567-2660. You may also obtain an application via the World Wide Web at:
http://studentservices.uthscsa.edu/publications/allied.html

Application Deadlines
EMT-Basic May 1
EMT-Paramedic July 1

Curriculum
The certification program includes classroom instruction, skills laboratories, and clinical rotations that offer the student the opportunity to apply patient care techniques while being closely supervised by faculty preceptors. Following successful completion of classroom and clinical instructions, students are promoted to field internships where they work as team members with other paramedics on ambulances in providing pre-hospital life support to the ill or injured.

Course Descriptions
EMSP 1145 Prehospital Trauma Life Support (PHTLS) 0.5 Semester Credit Hour
This course is an intense skills development in emergency field management, systematic rapid assessment, resuscitation, packaging, and transportation of patients. The course includes experiences necessary to meet initial certification requirements.

EMSP 1256 Airway Management and Patient Assessment 2.5 Semester Credit Hours
This course is a detailed study of the knowledge and skills required to reach competence in performing patient assessment and airway management.

EMSP 1455 Trauma Management and EMS Operations 4.5 Semester Credit Hours
This course is a detailed study of the knowledge and skills necessary to reach competence in the assessment and management of patients with traumatic injuries and safely manage the scene of an emergency.

EMSP 1461 EMSP Paramedic Clinical I 4.0 Semester Credit Hours
This course is a method of instruction providing detailed education, training, and work-based experience, and direct patient/client care at a clinical site.

EMSP 1501 EMT-Basic (Introduction to Emergency Care) 8.0 Semester Credit Hours
This course is an introduction to the level of Emergency Medical Technician Basic (EMT-B). The course includes all the skills necessary to provide emergency medical care at the basic life support level with an ambulance service or other specialized services.

EMSP 1538 Introduction to Advanced Practice 5.5 Semester Credit Hours
This course is an exploration of the foundations necessary for mastery of the advanced topics of clinical practice out of hospital.
EMSP 2130 Special Populations & Assessment-Based Management
2.0 Semester Credit Hours
This course is a detailed study of the knowledge and skills necessary to reach competence in the assessment and management of ill or injured patients in the nontraditional populations; and, a capstone course designed to provide for teaching and evaluating comprehensive assessment-based patient-care management.

EMSP 2334 Medical Emergencies
4.0 Semester Credit Hours
This course is a detailed study of the knowledge and skills necessary to reach competence in the assessment and management of patients with medical emergencies in the pre-hospital setting.

EMSP 2461 EMSP Paramedic Clinical II
2.0 Semester Credit Hours
This course is a method of instruction providing detailed education, training, and work-based experience, and direct patient/client care at a clinical site.

EMSP 2544 Cardiology
5.5 Semester Credit Hours
This course is a detailed study of the knowledge and skills necessary to reach competence in the assessment and management of patients with cardiac emergencies.

EMSP 4010 Advanced Cardiac Life Support
0.5 Semester Credit Hour
Prerequisite: Basic Life Support
Instruction presented will provide students with the opportunity to satisfy guidelines published by the American Heart Association for its Advanced Cardiac Life Support core curriculum. The focus is on the initial management of the cardiopulmonary-arrest patient including advanced airway management techniques, cardiovascular pharmacology, defibrillation, mechanical respiratory support, and basic EKG recognition. The student must review the current AHA ACLS manual prior to the class. Successful completion results in ACLS Provider Course Completion Certification.

Bachelor of Science in Emergency Health Sciences
Paramedics who have earned a certificate may choose to continue their education to earn a Bachelor of Science degree in Emergency Health Sciences (EHS), offered by the Department of Emergency Medical Technology.

The baccalaureate degree offers additional opportunities to practice in the field of pre-hospital emergency medical technology, in administration, teaching, or advanced level practice.

The objective of the baccalaureate degree program is to broaden the knowledge base and professional skills of emergency medical services (EMS) professionals who wish to pursue a Bachelor of Science level degree that will help enable them to fulfill a more enlightened leadership role within the community and help provide them with an enhanced capability to facilitate the delivery of EMS and emergency/community health services. The EHS degree gives the graduate the opportunity to assume positions of responsibility in the Emergency Medical Services provision to political entities, educational institutions, and private enterprises. Generally, the EHS degree program provides the graduate with information on how to manage and direct EMS organizations, deliver educational and regulatory information to many and varied communities of interest and students, and they may satisfy disaster management/planning requirements for localities as emergency managers. Additionally, the graduate is informed of the tools of program and fiscal evaluation and planning required by local, state, and national standards and the ethics of EMS.

The purpose of the Emergency Health Sciences degree is to help the graduate assume broader positions of responsibility in a variety of health care, research, business, community and educational settings, and to adapt to new rules precipitated by a changing health care delivery environment.

Course Descriptions
EMSP 3001 Foundations of Emergency Health Sciences
3.0 Semester Credit Hours
This course is an introduction to EMSP. This course surveys the history, evolution, theoretical concepts, and clinical methods and techniques that support the practice of EMSP.

EMSP 3003 Critical Care Medicine
3.0 Semester Credit Hours
This course is designed to provide advanced knowledge in critical care medicine. Topics will include monitoring technology, advanced procedures, diagnostic testing, and treatment of acutely critical patients.

EMSP 3004 Pharmacology
3.0 Semester Credit Hours
This course is designed to provide the learner with a fundamental knowledge of the actions and therapeutic uses of drugs. The topics covered will include basic principles of drug action,
pharmacokinetics, autonomic and cardiovascular pharmacology, neuropharmacology, toxicology, endocrine pharmacology, and respiratory tract pharmacology.

**EMSP 3006 Electrocardiology in Emergency Medical Sciences**
3.0 Semester Credit Hours
A study of the fundamentals of electrocardiology, this course will emphasize the role of the 12-lead ECG in out-of-hospital medical care. The purpose of this course is to teach a systematic-analytical approach to rapid 12-lead interpretation. Topics begin with cardiac anatomy and physiology and progress to the level of recognizing the classic 12-lead and multi-lead ECG patterns.

**EMSP 3007 Human Diseases**
3.0 Semester Credit Hours
This purpose of this course is to provide a foundation in basic disease conditions, pathophysiological process behind major diseases and their causes, definitions of disease, classifications of disease, and descriptions of diseases as they pertain to the emergency health sciences.

**EMSP 3031 Independent Study I — Clinical**
3.0 Semester Credit Hours
This course is available to the learner to allow for a voluntary course of independent study in a clinical/advanced provider concentration.

**EMSP 3041 Current Research in Emergency Health Sciences**
3.0 Semester Credit Hours
This course is a seminar designed to encourage the learner to discover research and research trends in the field of EMSP. Basic concepts in research methods will be discussed. The learner will have the opportunity to discover methods, procedures, and ways of analysis for examining research.

**EMSP 4001 Extended Provider Skills and Preventative Medicine**
3.0 Semester Credit Hours
The purpose of this course is to provide the learner with the ability to perform and work in non-traditional and rural settings. Learners will have the opportunity to gain the skills of patient assessment, disease identification, health education, and preventative medicine. Learners are given the opportunity to study methods for understanding disease processes through proper techniques for eliciting a complete patient history and performing a thorough physical examination, including integration of data obtained from the newer and more sophisticated modes of diagnostic technology.

**EMSP 4002 Pathophysiology**
3.0 Semester Credit Hours
This course is designed to introduce the student to pathophysiological concepts related to altered biological processes affecting individuals across the lifespan. It includes basic mechanisms of disease, the immune response, and selected disorders of the following systems: neurologic, endocrine, reproductive, musculoskeletal, cardiovascular, hematologic, respiratory, urinary, and digestive.

**EMSP 4003 Flight Medicine**
3.0 Semester Credit Hours
This course is designed to provide the learner with general physics of flight as well as the effect that flight has on patients and equipment utilized in patient care. Additionally, general aviation guidelines and safety protocols will be introduced as well as the regulatory structure of flight medicine.

**EMSP 4004 Management of Disasters and Hazardous Materials**
3.0 Semester Credit Hours
This course discusses considerations of the theoretical and practical foundations necessary to manage multi-casuality and multi-agency incidents, including planning, response, triage, and scene control. Medical, surgical, mental health, and public health views are discussed along with the resolution phases of disaster.

**EMSP 4005 EMSP Systems Management and Budgeting**
3.0 Semester Credit Hours
This course is designed to identify and discuss various forms and trends of EMSP Systems management. From the volunteer service to the large, urban EMSP system, the learner will have the opportunity to become familiar with the various aspects of America's EMSP services. Budgeting and financial management skills and understanding necessary to manage emergency health systems will be emphasized.

**EMSP 4006 Educational Issues in EHS**
3.0 Semester Credit Hours
This course focuses upon how to design and implement initial and continuing education courses. The course includes a review of educational psychology of the adult, state, and national continuing education requirements; an investigation of new and effective instructional methods; and an appraisal of evaluation procedures.

**EMSP 4007 Human Resource Development**
3.0 Semester Credit Hours
This course reviews the policies necessary to ensure that properly prepared and motivated personnel are available to carry out the mission and daily operations of an EMS organization and to gain a scholarly understanding of and familiarity with foundational HRD theory and research. Topics include methods of hiring staff, performance appraisal processes, legal requirements around health and safety, union matters, and sexual harassment in the workplace.

**EMSP 4008 Leadership Development**
3.0 Semester Credit Hours
This course is a study and application of contemporary leadership theories; and conceptual, skill-building, feedback, and personal growth approaches for the development of effective organizational leadership behaviors and practices.

**EMSP 4022 Internship: Advanced Practitioner in EMSP**
12.0 Semester Credit Hours
This course is a semester internship/capstone experience.

**INTD 4006 Professional Issues**
1.0 Semester Credit Hours
This interdisciplinary course provides an overview of ethical issues facing allied health professionals.
Admission and Application

Information about admission and application to the EHS program can be obtained from the School of Allied Health Sciences Registrar’s office (210-567-2660; online – http://studentservices.uthscsa.edu/publications/allied.html). Admission is competitive. Requirements for admission include:

1. Current EMT-Paramedic certification, state or national.
2. 42 hours of prescribed college work. (These hours may be taken concurrently with the degree program.)
3. Cumulative GPA of 2.0 for all college level work.

Applications and required documents are to be mailed to:

UTHSCSA
Allied Health Admissions
Office of the Registrar
Mail Code 7702
7703 Floyd Curl Drive
San Antonio, Texas 78229-3900

It is the responsibility of the applicant to request that all transcripts be sent to the UTHSCSA Registrar. Further, it is recommended that applicants confirm that all transcripts have been sent and subsequently received by the published deadline dates.

Application Deadline

Applications for admission to the EHS degree program are accepted from September 1 through April 1 each year. Applicants should submit completed applications, required documents and official transcripts from the college(s) attended no later than April 1 for enrollment in August.

Reviewing Applications

The Emergency Medical Technology Applicant Admissions Committee reviews applications and selects applicants based on application review. Accepted applicants will be notified by mail.

Financial Aid

Financial aid is available for eligible students. Interested applicants should contact the Office of Financial Aid, (210) 567-2635, or, for further information and/or online applications, go to:

http://studentservices.uthscsa.edu/financialinfo/financialaid2.html

Estimated Program Costs

Total costs for in-state tuition and fees, parking permits, health and liability insurance, etc., are approximately $1,000 for the EMT-Basic certificate program, $3,300 for the paramedic certificate program, and $6,500 for the EHS Bachelor of Science degree program. In addition, costs for other expenses, such as textbooks, course manuals, equipment, uniforms or scrubs, and supplies, are approximately $200 for the entire EMT-Basic certificate program, $400 for the paramedic certificate program, and $800 for the EHS Bachelor of Science degree program.

Non-resident students are subject to additional tuition costs, which may be found under “Financial Information” in this Catalog.

Additional Information

For additional information please call the Department of Emergency Medical Technology at (210) 567-7860 or visit one of the following Web sites:

EMT http://www.uthscsa.edu/sah/emt.html
Student Services http://studentservices.uthscsa.edu/
OCCUPATIONAL THERAPY

Occupational therapy involves the assessment and treatment of individuals whose ability to perform tasks of living is threatened or impaired by developmental disability, physical disability, psychosocial dysfunction, sensory impairment, or the aging process. The occupational therapy process involves the prevention or correction of physical, developmental, or emotional problems that affect functional performance of the individual. The goal of occupational therapy is to assist the client in the performance of activities which provide meaning to her or his life.

Occupational therapists serve clients of all ages in a variety of settings including rehabilitation facilities, long-term care facilities, public schools, psychiatric hospitals, day care facilities, sheltered workshops, community agencies, and industrial sites.

Master of Occupational Therapy Program

The Master of Occupational Therapy (MOT) is a 2 1/2-year program that begins in the summer and consists of 105–110 semester credit hours, including 20 semester hours (6 months) of full-time clinical fieldwork. The preprofessional phase consists of 89 hours of required course work taken at any regionally accredited college or university. MOT students may be awarded a Bachelor of Science in Health Care Sciences (BSHCS) after successful completion of the first-year summer, fall, and spring semesters in the program. Upon successful completion of the professional program and the fieldwork requirements, students will receive the Master of Occupational Therapy degree (MOT). The program is accredited through the Accreditation Council for Occupational Therapy Education (ACOTE). For further information about the accreditation process contact:

American Occupational Therapy Association
4720 Montgomery Lane/PO Box 31220
Bethesda, MD 20824-1220
Telephone: (301) 652-AOTA

Graduates of the program are eligible to take the national certification examination administered by the National Board for Certification in Occupational Therapy (NBCOT) and to apply for licensure which is required for practice in most states. After successful completion of this examination, the individual will be a Registered Occupational Therapist (OTR).

Admission Requirements

Eighty-nine semester hours of prerequisite courses must be completed. Additional requirements include:

- Prerequisite course GPA of at least 3.0
- Knowledge and understanding of occupational therapy gained through a minimum of 20 hours volunteer and/or observation under the general supervision of a registered occupational therapist. A Documentation of Experience form will be mailed by the Registrar’s Office after your application and application fee have been received.
- Two letters of reference. Required forms will be mailed after an application is received by the UTHSCSA Registrar’s Office.
- Minimum score of 560 on the Test of English as a Foreign Language (TOEFL) for applicants from countries where English is not the native language.
- Personal interviews with faculty will be arranged for applicants who have met the above requirements.
- A maximum of 35 students will be admitted each year, based upon a rank ordering of all prospective applicants using the above-listed requirements.
- COTA applicants may use selected courses from their OTA program to substitute for some prerequisite courses with OT departmental approval.

Prerequisite Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>English [6 hrs. Composition, 3 hrs. English elective]</td>
<td>9</td>
</tr>
<tr>
<td>U. S. History</td>
<td>6</td>
</tr>
<tr>
<td>Government [Including 3 hrs. Texas Government]</td>
<td>6</td>
</tr>
<tr>
<td>Computer Literacy</td>
<td>3</td>
</tr>
<tr>
<td>Humanities [Choose from the following: Education, Fine Arts, Foreign Language, and Philosophy]</td>
<td>9</td>
</tr>
<tr>
<td>Cultural/Social Sciences</td>
<td>18</td>
</tr>
<tr>
<td>Speech (i.e., Public Speaking) (3 hrs.)</td>
<td>6</td>
</tr>
<tr>
<td>Introduction to Psychology (3 hrs.)</td>
<td>3</td>
</tr>
<tr>
<td>Abnormal Psychology (3 hrs.)</td>
<td>3</td>
</tr>
<tr>
<td>Developmental Life Span Psychology (3 hrs.)</td>
<td>3</td>
</tr>
<tr>
<td>Sociology &amp;/or Anthropology (6 hrs.)</td>
<td>6</td>
</tr>
<tr>
<td>Math and Statistics [3 hrs. Algebra or higher; 3 hrs. Statistics]</td>
<td>7</td>
</tr>
<tr>
<td>Physical Sciences</td>
<td>12</td>
</tr>
<tr>
<td>Physics (3 hrs.) or Kinesiology (3 hrs.)</td>
<td>4</td>
</tr>
<tr>
<td>Chemistry &amp; Lab (4 hrs.)</td>
<td>4</td>
</tr>
<tr>
<td>Biological Sciences</td>
<td>12</td>
</tr>
<tr>
<td>General Biology (4 hrs.)</td>
<td>4</td>
</tr>
<tr>
<td>Human or Comparative Anatomy &amp; Lab (4 hrs.)</td>
<td>4</td>
</tr>
<tr>
<td>Human Physiology &amp; Lab (4 hrs.)</td>
<td>4</td>
</tr>
<tr>
<td>Medical Terminology</td>
<td>1</td>
</tr>
<tr>
<td>Electives</td>
<td>12</td>
</tr>
</tbody>
</table>

Suggestions:
- Leadership Skills
- Interpersonal Skills
- Public Health
- Kinesiology
- Economics
- Human Sexuality
Application Procedure
Application for admission to the professional phase should be made through the Registrar’s Office between September 1 and February 1. Individuals who are selected for admission will be notified by letter.

It is the responsibility of the applicant to stay informed about possible prerequisite changes for each application period.

Prospective applicants may submit transcripts and request an unofficial evaluation to Allied Health Admissions.

Estimated Program Costs
Total costs for in-state tuition and fees, parking permits, health and liability insurance, etc., are approximately $12,700. In addition, costs for other expenses, such as textbooks, course manuals, equipment, uniforms or scrubs, and supplies, are approximately $2,100 for the entire program. The full-time clinical fieldwork experiences included in the curriculum may require that students locate outside of San Antonio for the duration of the two three-month rotations. Fieldwork expenses will vary according to individual arrangements depending on the cost of travel, temporary housing, maintenance of local accommodations, etc. Students are encouraged to budget for major expenditures, which could be associated with these assignments.

Non-resident students are subject to additional tuition costs, which may be found under “Financial Information” in this Catalog.

Curriculum
Preprofessional Requirements 89 hours
Professional Requirements 105–110 hours
Total 194–199 hours

First Year
Summer Semester
CSBL 5013 Gross Anatomy 6.0
OCCT 5001 Theoretical Foundations in OT 2.0
Semester Total 8.0
(OCCT 5091 Special Topics or Electives 1.0–6.0 must be taken before Level II fieldwork; may be taken in Fall, Spring, or Summer semesters.)

Fall Semester
OCCT 5010 Human Occupation across the Life Span 3.0
OCCT 5023 Research I: Assessment & Statistics 3.0
OCCT 5012 Human Neuroscience in OT 4.0
OCCT 5013 Appl. Biomechanics of Movement 3.0
OCCT 5014 Professional Communication in OT 2.0
OCCT 5070 Level I Fieldwork: Life Span 1.0
Semester Total 16.0

Spring Semester
OCCT 5020 OT Process: Neonate-Preschool 4.0
OCCT 5021 Service Delivery Systems I 2.0
OCCT 5022 Environmental Technologies I 2.0
OCCT 5011 Research II: Intro. to Research & Design 3.0
OCCT 5024 Clinical Medicine I 1.0
OCCT 5071 Level I Fieldwork: Neonatal-Preschool 1.0
OCCT 6026 Psychosocial Components of OT 4.0
Semester Total 17.0

Second Year
Summer Semester
OCCT 5025 General Pathology 3.0
OCCT 6027 Health Care Management 3.0
Semester Total 6.0

Fall Semester
OCCT 6020 OT Process: School Age 4.0
OCCT 6021 Service Delivery Systems II 2.0
OCCT 6022 Environmental Technologies II 3.0
OCCT 6024 Clinical Medicine II 1.0
OCCT 6030 OT Process: Adult Biomechanical Dysf. 4.0
OCCT 6070 Level I Fieldwork: School Age 1.0
Semester Total 15.0

Spring Semester
OCCT 6031 Service Delivery Systems III 3.0
OCCT 6032 Environmental Technologies III 2.0
OCCT 6034 Professional Issues 1.0
OCCT 6035 Concepts & Practices in Teaching 3.0
OCCT 6037 OT Process: Adult Neuromuscular Dysf. 4.0
OCCT 6045 Clinical Medicine III 1.0
OCCT 6072 Level I Fieldwork: Adult & Geriatric I 2.0
Semester Total 16.0

Third Year
Summer Semester
OCCT 5072 Level I Fieldwork: Comm. Agencies 6.0
Semester Total 6.0

Fall Semester
(12 weeks)
OCCT 6073 Level II Fieldwork: Developmental Dysf. 4.0
OCCT 6074 Level II Fieldwork: Adult Disabilities 10.0
Semester Total 10.0

Spring Semester
OCCT 6073 Level II Fieldwork: Developmental Dysf. 4.0
OCCT 6074 Level II Fieldwork: Adult Disabilities 10.0
## Curriculum for the Laredo Campus Extension
### Bridge OTA to MOT Program

#### First Year

<table>
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<tr>
<th>Term</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
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<tr>
<td><strong>Spring</strong></td>
<td></td>
<td><strong>Course is considered a prerequisite course</strong></td>
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<tr>
<td></td>
<td>*BIOL 3403-101 (Lecture)</td>
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<td></td>
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<tr>
<td></td>
<td>*BIOL 3003-1L1 (Lab) Gross Anatomy (at TAMIU)</td>
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<tr>
<td><strong>Summer Semester</strong></td>
<td>OCCT 5015</td>
<td>Selected Practicum Experience in Gross Anatomy</td>
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<tr>
<td></td>
<td>OCCT 5014</td>
<td>Professional Communication in OT</td>
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<tr>
<td><strong>Fall Semester</strong></td>
<td>OCCT 5012</td>
<td>Human Neuroscience in OT</td>
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<td></td>
<td>OCCT 5013</td>
<td>Appl. Biomechanics of Movement</td>
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<td><strong>Spring Semester</strong></td>
<td>OCCT 5020</td>
<td>OT Process: Neonate - Preschool</td>
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<td>OCCT 5021</td>
<td>Service Delivery Systems I</td>
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<td></td>
<td>OCCT 5024</td>
<td>Clinical Medicine I</td>
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<td><strong>Second Year</strong></td>
<td>OCCT 5023</td>
<td>Research I: Assessment &amp; Statistics</td>
<td>3.0</td>
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<td></td>
<td>OCCT 5070</td>
<td>Level I Fieldwork: Life Span</td>
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<td>OCCT 5071</td>
<td>Level I Fieldwork: Neonatal - Preschool</td>
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<td>OCCT 6070</td>
<td>Level I Fieldwork: School Age</td>
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<td></td>
<td>OCCT 6072</td>
<td>Level I Fieldwork: Adult &amp; Geriatric I</td>
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<td><strong>Fall Semester</strong></td>
<td>OCCT 5011</td>
<td>Research II: Intro. to Research &amp; Design</td>
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<td>OCCT 5022</td>
<td>Environmental Technologies I</td>
<td>2.0</td>
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<td></td>
<td>OCCT 6026</td>
<td>Psychosocial Components of OT</td>
<td>4.0</td>
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<tr>
<td><strong>Summer Semester</strong></td>
<td>OCCT 5025</td>
<td>General Pathology</td>
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<td></td>
<td>OCCT 6027</td>
<td>Health Care Management</td>
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<td><strong>Third Year</strong></td>
<td>OCCT 6020</td>
<td>OT Process: School Age</td>
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<tr>
<td></td>
<td>OCCT 6021</td>
<td>Service Delivery Systems II</td>
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<tr>
<td></td>
<td>OCCT 6024</td>
<td>Clinical Medicine II</td>
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#### Second Year

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<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<td>OCCT 6037</td>
<td>OT Process: Adult</td>
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<td></td>
<td>OCCT 6031</td>
<td>Service Delivery Systems III</td>
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<td>OCCT 6045</td>
<td>Clinical Medicine III</td>
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<td><strong>Fourth Year</strong></td>
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<td>Semester Total</td>
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<td><strong>Fall Semester</strong></td>
<td>OCCT 6030</td>
<td>OT Process: Adult</td>
<td>4.0</td>
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<tr>
<td></td>
<td>OCCT 6022</td>
<td>Environmental Technologies II</td>
<td>3.0</td>
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<td><strong>Spring Semester</strong></td>
<td>OCCT 6035</td>
<td>Concepts &amp; Practices in Teaching</td>
<td>3.0</td>
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<td></td>
<td>OCCT 6032</td>
<td>Environmental Technologies III</td>
<td>2.0</td>
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<td></td>
<td>OCCT 6034</td>
<td>Professional Issues</td>
<td>1.0</td>
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<td><strong>Summer Semester</strong></td>
<td>OCCT 5072</td>
<td>Level I Fieldwork: Comm. Agencies</td>
<td>6.0</td>
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<td>OCCT 6074</td>
<td>Level II Fieldwork: Adult Disabilities</td>
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<td>(12 weeks) or</td>
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#### Course Descriptions

**CSBL 5013  Gross Anatomy**

*6.0 Semester Credit Hours*

This course will cover dissection and regional study of human gross anatomy with emphasis on artrology, osteology, gross neuromuscular and vascular anatomy, regional and general relationships between structures, and applied anatomy relevant to the practice of occupational therapy. Human materials fee: $300.00.

**OCCT 5001  Theoretical Foundations in Occupational Therapy**

*2.0 Semester Credit Hours*

This course is an overview of the critical issues of occupational therapy. This course includes the history, frames of references, current trends and legislative concerns that impact practice.
OCCT 5010  Human Occupation Across the Life Span
3.0 Semester Credit Hours
This course is a study of the character and purpose of human activity throughout the life span. Areas of occupation, performance skills, performance patterns, client factors, and contexts are examined for each stage of life.

OCCT 5011  Research I: Intro. to Research & Design
3.0 Semester Credit Hours
The purpose of this lecture course is to introduce the student to the purpose of research and designs appropriate for answering research questions in practice settings. Topics include quantitative and qualitative designs.

OCCT 5012  Human Neuroscience in Occupational Therapy
4.0 Semester Credit Hours
A study of the structure, functions and development of the human nervous system with particular emphasis on the application of theoretical concepts to treatment techniques practiced in Occupational Therapy. The course utilizes a variety of media, including Internet resources to facilitate understanding of the didactic information presented. Clinical cases are discussed using neuroscientific principles. This course is 100% Web-based with some face-to-face review sessions (available only to UTHSCSA students at this time).

OCCT 5013  Applied Biomechanics of Movement
3.0 Semester Credit Hours
This course is a study of kinesiology and biomechanical principles related to human motion with application to occupational therapy assessment techniques of the musculoskeletal system including goniometry and manual muscle testing.

OCCT 5014  Professional Communication in Occupational Therapy
2.0 Semester Credit Hours
This course is the study of effective communication skills for occupational therapists in health care relationships. The course will focus on an understanding of self-communication behaviors and development of skills to interact non-verbally and verbally with patients, health teams, supervisors, families, and groups. Lecture, videotapes, and experiential activities will be used.

OCCT 5015  Selected Practicum Experience in Gross Anatomy
0 Semester Credit Hours
Prerequisite: consent of the instructor
Restricted to students enrolled in the Laredo COTA-MOT Bridge Program, this course emphasizes the areas in gross anatomy in which the student lacks previous experience.

OCCT 5020  Occupational Therapy Process: Neonate - Preschool
4.0 Semester Credit Hours
This course is a study of occupational therapy practice with neonates through preschool children and their families. Occupational therapy theory, assessment, and treatment over the domains of performance areas, performance components, and performance context are examined. The following content areas are highlighted: neurodevelopmental treatment, feeding, positioning, and failure to thrive.

OCCT 5021  Service Delivery Systems I
2.0 Semester Credit Hours
This course explores service delivery systems that exist for infants and young children with medical conditions and developmental disabilities. Topics include the organizational culture, administrative structure, missions, documentation procedures, and team interactions associated with occupational therapy in pediatric hospitals and early intervention programs.

OCCT 5022  Environmental Technologies I
2.0 Semester Credit Hours
This course provides the philosophical and therapeutic basis for occupational therapy utilization of adaptive, technological, and therapeutic equipment and materials. Activity analysis and problem-solving principles are developed. Included will be environmental adaptations, and adaptive equipment for personal care, leisure, and home management.

OCCT 5023  Research I: Assessment and Research Statistics
3.0 Semester Credit Hours
This course focuses on the application of descriptive and inferential statistics in research studies in the health sciences. Students are provided the opportunity to gain a base of knowledge that will enable them to understand, interpret, and evaluate statistical results; work with a consultant statistician; and use statistical software to enter, analyze, and summarize data. Teaching methods include lecture, Web-supported technology, and problem-based learning groups.

OCCT 5024  Clinical Medicine I
1.0 Semester Credit Hour
This course is an overview of the manifestations of developmental disabilities in pediatric patients and their medical and surgical management.

OCCT 5025  General Pathology
3.0 Semester Credit Hours
General concepts and diseases specific to organ systems of the body with emphasis placed on those pathologies encountered in clinical occupational therapy practice.

OCCT 5070  Level I Fieldwork: Life Span
1.0 Semester Credit Hour
This course is an opportunity for the student to observe, identify, and associate areas of occupation, performance skills, performance patterns, client factors, and contexts with age-specific populations through visits to community settings.

OCCT 5071  Level I Fieldwork: Neonatal—Preschool
1.0 Semester Credit Hour
An opportunity for the student to observe and begin participation in the assessment and treatment of infants and preschool children and their families. Students will be exposed to clinical and community facilities that serve this population.

OCCT 5072  Level I Fieldwork: Community Agencies
6.0 Semester Credit Hours
An opportunity for the student to observe, critique, and suggest ways to provide occupational therapy services to individuals involved in community agencies. The student is responsible for selecting a community agency of interest to her/him, and for collaboratively developing learning experiences with agency personnel.
OCCT 5091  Special Topics
1.0–6.0 Semester Credit Hours
This course will be arranged through departmental faculty. The course topics vary according to student interests. Semester hours are variable and credit hours will be assessed per topic. Could be offered in Fall, Spring, or Summer sessions.

OCCT 6020  Occupational Therapy Process: School Age
4.0 Semester Credit Hours
This course is the study of occupational therapy practice with school-aged children ages 3–21 years. Occupational therapy assessment and intervention over the domains of performance area, performance components, and performance context is examined. The following issues will be highlighted: sensory integration, behavior modification, prehension and handwriting, self-help skills, school tasks, and transitional and prevocational training.

OCCT 6021  Service Delivery Systems II
2.0 Semester Credit Hours
This course examines service delivery systems for school-aged children and adolescents with developmental disabilities. Topics include the organizational culture, administrative structure, missions, documentation procedures, and team interactions associated with occupational therapy in public schools; transitional living programs; and prevocational and supported employment settings.

OCCT 6022  Environmental Technologies II
3.0 Semester Credit Hours
This course explores the assistive technologies available for use by individuals with disabilities so they may pursue educational, vocational, and recreational occupations. Included are computer input/output technologies, augmentative and alternative communication systems, aids for persons with sensory impairments, and electronic aids to daily living.

OCCT 6024  Clinical Medicine II
1.0 Semester Credit Hour
Clinical manifestations of adult biomechanical disorders will be presented. The medical and surgical management for these conditions will be described.

OCCT 6026  Psychosocial Components of Occupational Therapy
4.0 Semester Credit Hours
The goals of this course are to provide an understanding of psychiatric disease classification and the diagnosis and medical management of psychosocial conditions. Students will have the opportunity to compare and contrast the contemporary bodies of knowledge in common use throughout the mental health arena and learn the specific occupational therapy evaluation and intervention procedures as they relate to each theoretical frame of reference.

OCCT 6027  Health Care Management
3.0 Semester Credit Hours
This course is intended to provide the graduate student with an opportunity to assume supervisory, administrative, or management functions related to the delivery of occupational therapy services in the contemporary health care systems. The course is a study of the political, economic, legal and ethical factors that impact occupational therapy practices. Special emphasis will be given to the occupational therapy management functions of planning, organizing, directing, coordinating, controlling, and communicating.

OCCT 6030  Occupational Therapy Process: Adult Biomechanical Dysfunctions
4.0 Semester Credit Hours
This course is a study of the theories and approaches of occupational therapy management and intervention for adults with musculoskeletal disorders. Occupational therapy assessment and intervention over the domains of performance area, performance components, and performance context is examined.

OCCT 6031  Service Delivery Systems III
3.0 Semester Credit Hours
This course examines service delivery systems that exist for adults and the elderly with physical dysfunctions. Topics include the organizational culture, administrative structure, missions, documentation procedures, and team interactions associated with occupational therapy in rehabilitation hospitals, outpatient clinics, vocational settings, nursing homes, home health settings, assisted living settings, and hospice programs.

OCCT 6032  Environmental Technologies III
2.0 Semester Credit Hours
This course will include the biomechanical and compensatory considerations for the human body and environmental interfacing across the life span. Included are seating and positioning systems, technologies for personal mobility, and work environment interfaces.

OCCT 6034  Professional Issues
1.0 Semester Credit Hour
Using a workshop format, this interdisciplinary course will provide an overview of theoretical issues in the health care profession.

OCCT 6035  Concepts & Practices in Teaching
3.0 Semester Credit Hours
The purpose of this course is to explore adult learner teaching methodologies and techniques that are applicable to classroom, clinical, or community settings. Students will define objectives, and plan and prepare instructional materials and practice skills.

OCCT 6037  Occupational Therapy Process: Adult Neuromuscular Dysfunctions
4.0 Semester Credit Hours
This course is a study of the theories and approaches of occupational therapy assessment and intervention for adults with sensorimotor and neuromuscular dysfunction. Occupational therapy assessment and intervention over the domains of performance area, performance components, and performance context is examined.

OCCT 6045  Clinical Medicine III
1.0 Semester Credit Hour
Clinical manifestations of adult neuromuscular disorders will be presented. The medical and surgical management for these conditions will be described.

OCCT 6070  Level I Fieldwork: School Age
1.0 Semester Credit Hour
Students will have the opportunity to observe, participate, and critique the occupational therapy process in public school and supported employment settings with children and adolescents with developmental disabilities.
OCCT 6072  Level I Fieldwork: Adult & Geriatric Settings

2.0 Semester Credit Hours
Students will have the opportunity to observe, participate, and critique the occupational therapy process with adults and older adults within community and rehabilitation settings.

OCCT 6073  Level II Fieldwork: Developmental Dysfunction

10.0 Semester Credit Hours
This course is a three-month fieldwork placement in an occupational therapy setting where the student will have the opportunity to gain competence in providing occupational therapy services to individuals with developmental disabilities.

OCCT 6074  Level II Fieldwork: Adult Disabilities

10.0 Semester Credit Hours
This course is a three-month fieldwork placement in an occupational therapy setting where the student will have the opportunity to gain competence in providing occupational therapy services to adults with disabilities.

Continuation, Probation, Dismissal
Continuation as a Occupational Therapy student is dependent on maintenance of a minimum cumulative grade point average of 3.0 (B) for all courses. A student whose cumulative grade point average falls below 3.0 will be subject to academic probation. While on probation, a student must maintain a B average in those courses for which he or she is registered or be considered for dismissal. A student who receives a grade of D or F in any semester or continues on probation will also be subject to dismissal. All decisions concerning probation or dismissal will be based on recommendations from the Committee on Allied Health Studies. The Committee may recommend: dismissal, academic probation, repetition of the course when next offered, repetition of the year/semester, or other actions as deemed appropriate. If repetition of a course when next offered is recommended, the student may not continue taking subsequent courses in the curriculum until that course is successfully completed. Under no circumstances will a student on probation be awarded a degree.
PHYSICAL THERAPY

Physical therapy is the assessment, evaluation, treatment, and prevention of physical disability, movement dysfunction, and pain resulting from injury, disease, disability, and other health-related conditions. It is the mission of the physical therapy profession to expand and use its body of knowledge to increase functional ability, decrease disability, educate patients/clients, and reduce the financial and personal costs of disability to society. Physical therapists practice in traditional hospital settings, private practice, rehabilitation centers, public and private school settings, home health care, nursing homes, and industry.

The Physical Therapy program is accredited by the Commission on Accreditation in Physical Therapy (CAPTE), 1111 N. Fairfax Street, Alexandria, Virginia 22314.

Master of Physical Therapy Program

The Master of Physical Therapy (MPT) is conducted over 8 semesters (30 months) that begin in the fall and consists of 100 semester credit hours. The program includes 24 weeks of full-time clinical affiliations conducted during summer and fall semesters. MPT students may be awarded a Bachelor of Science in Health Care Sciences (BSHCS) after successful completion of the first year fall and spring semesters in the program (minimum of 120 semester credit hours, including 90 prerequisite semester hours). Graduates of the 30-month program will be awarded the Master of Physical Therapy degree (MPT) and will be eligible to sit for the licensure examinations for physical therapists. A license to practice in the State of Texas is contingent upon successful completion of this examination.

Admission and Application

Information about admission and application to the Physical Therapy program is detailed in the Applicant Viewbook of the School of Allied Health Sciences which is available by contacting Allied Health Admissions, Office of the Registrar or online at: http://studentservices.uthscsa.edu/publications/allied.html. Applicants interested in receiving the BS in Health Care Sciences and the MPT degree must complete 90 semester hours of prerequisites prior to admission. Applicants interested in receiving the MPT degree only must complete the 66 hours of program prerequisite requirements. In addition to prerequisites, applicants should have an overall GPA of 3.0 on a 4.0 scale; a math/science GPA of at least 3.0 on a 4.0 scale; a minimum of 100 hours of volunteer work or work as a paid employee in a physical therapy clinic; completion of the Graduate Record Examination (GRE); a personal résumé; and a personal statement.

All applicants to the program will be considered on an individual basis. The Registrar will begin processing applications in September of each year. Applicants are encouraged to apply early as we have a “first-come, first-served” policy of admissions. To be considered for PRIORITY ADMISSION, the class will first be filled by qualified applicants who apply by our November 15 priority deadline. However, applicants can be accepted at any time during the application process from September 1 through July 30, or until the class is full. We welcome both domestic and international students in the following categories:

1. Applicants without a baccalaureate or graduate degree;
2. Applicants with an earned baccalaureate or graduate degree;
3. Applicants with recognized physical therapist qualifications such as certificate, diploma, undergraduate, or graduate degree.

Interviewed applicants are evaluated on the basis of criteria that reflect maturity, leadership potential, writing skills, time management skills, communication skills, and knowledge of the profession.

Curriculum**

First Year

<table>
<thead>
<tr>
<th>Fall Semester*</th>
<th>Credit Hours</th>
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<tr>
<td>PHYT 5001 Patient Care I</td>
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<td>PHYT 5005 Therapeutic Exercise</td>
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<tr>
<td>PHYT 5009 Neuroscience I</td>
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<tr>
<td>PHYT 5014 Scientific Inquiry I</td>
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<td>PHYT 5017 Pathology</td>
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<td>CSBL 5014 Anatomy I</td>
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<td>PHYT 5003 Ethics Health Care</td>
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<td>PHYT 5011 Patient Care II</td>
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<tr>
<td>PHYT 5012 Kinesiology</td>
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<td>PHYT 5019 Neuroscience II</td>
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Second Year

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<td>PHYT 6001 Orthopedic Case Studies</td>
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<tr>
<td>PHYT 6002 Orthopaedics I</td>
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<td>PHYT 6007 Orthotics</td>
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<tr>
<td>PHYT 6013 Cardiopulmonary Rehabilitation</td>
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<tr>
<td>PHYT 6100 Neuro Case Studies I</td>
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<tr>
<td>PHYT 6108 Mgt. of Neurological Patient I</td>
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* Competency in medical terminology must be shown by the end of the first semester at the Health Science Center. Competency may be demonstrated by credit for such a course taken prior to matriculation or by passing a competency test administered by the program during the first semester.

** NOTE: Elective course topics may vary according to student interest. Semester hours are variable and credit hours will be assessed per topic.
Spring Semester
PHYT 6011 Electrophysical Agents 3.5
PHYT 6101 Neuro Case Studies II 1.0
PHYT 6005 Medical Lectures 3.0
PHYT 6114 Orthopaedics II 2.5
PHYT 6116 Mgt. of Neurological Patient II 4.0
PHYT 6012 Prosthetics 1.5
PHYT 5018 Pharmacology 1.0
Semester Total 16.5

Summer Semester
PHYT 5021 Clinical I 8.0
Semester Total 8.0

Third Year
Fall Semester
PHYT 6021 Clinical II 8.0
PHYT 6121 Clinical III 8.0
Semester Total 16.0

Spring Semester
CSBL 6010 Anatomy II 1.5
PHYT 5091 Special Topics 2.0
PHYT 6102 Scientific Inquiry II 2.0
PHYT 6106 Administration 4.0
PHYT 6023 Teaching Practicum II 1.0
PHYT 6112 Differential Diagnosis 1.0
Semester Total 11.5
Program Total 100.0

Course Descriptions

PHYT 5001 Patient Care I
4.0 Semester Credit Hours
This course covers the basic physical therapy techniques and procedures. Students are provided the opportunity to participate in experiences which are required for the development of fundamental skills in patient care. Topics include, but are not limited to, the physical management of the patient (e.g., transfers, positioning, ambulation training); therapist-patient interaction (e.g., learning styles, interviewing techniques, patient privacy, informed consent issues); and documentation.

PHYT 5003 Ethics in Health Care
1.0 Semester Credit Hour
This interdisciplinary course will provide students with an overview of ethical issues facing allied health professionals. Topics to be discussed include responsibilities of the health care professional, life and death decisions, patient confidentiality, substance abuse, whistleblowing, and informed consent. Ethics in research and other critical issues related to health care problems also will be addressed. Collaborative activities and simulated cases will be used to enhance discussion among students.

PHYT 5005 Therapeutic Exercise
3.0 Semester Credit Hours
This course provides students with the opportunity to acquire information and experiences related to the biology of voluntary exercise or work. Emphasis is placed on nutrition, energy metabolism, and the cardiopulmonary and neuromuscular systems and the response of these systems to acute and chronic exercise in the healthy individual. The body’s response to environmental and occupational stressors will be examined. In addition, the basic principles of therapeutic exercise will be covered with emphasis on different forms of exercise and their application in addressing problems of strength, endurance, and flexibility. Applications to prevention and rehabilitation will be discussed.

PHYT 5009 Neuroscience I
3.0 Semester Credit Hours
This course provides foundational information on the structures and functions of the developing and mature nervous system. Basic functions of the central and peripheral nervous systems and sensory functions are discussed in the context of understanding the effects of aging, trauma, and disease on functions of the nervous system.

PHYT 5011 Patient Care II
3.5 Semester Credit Hours
The purposes of this course are (1) to provide the student with the information and opportunities to develop skill in basic physical therapy evaluation techniques including palpation, goniometry, manual muscle testing, volumetric measurements, girth measurements, and assessment of cutaneous senses and deep tendon reflexes; and (2) to provide the student with the information and opportunities to develop skill in the delivery of physical therapy treatment modalities such as superficial heat, cold, hydrotherapy, ultraviolet, intermittent compression, traction, massage, and laser biostimulation.

PHYT 5012 Kinesiology
4.0 Semester Credit Hours
A study of joint structure and function and the mechanical principles underlying the kinematics and kinetics of human motion, with emphasis on the interaction between biomechanical and physiological factors in skeletomotor function and the implications of kinesiological principles in physical therapy practice.

CSBL 5014 Anatomy I
4.5 Semester Credit Hours
The purpose of this course is to introduce the student to gross anatomical structures and to provide the student with the opportunity to begin building an understanding of the relationship between structure and function. This course will consist of lecture and lab, with lab activities confined to the study of prospected specimens and skeletal models. Lab fee: $30.

PHYT 5014 Scientific Inquiry I
3.0 Semester Credit Hours
This course provides a general introduction to research design. Topics include different forms of experimental and nonexperimental research, development of a research question, hypothesis and hypothesis testing, and an introduction to the process of critical analysis. Students will have an opportunity to start the process of selecting an appropriate research question.

PHYT 5017 Pathology
1.0 Semester Credit Hour
This course covers basic pathological processes and presentation of those pathological processes. Emphasis is placed on having the student develop an understanding of pathological processes and cellular reactions to injury. Course content will include: mechanisms of cell injury and cellular adaptations of growth and differentiation, basic immunology including cells of the immune system, histocompatibility genes, immune mechanisms of tissue injury, autoimmune diseases, immunodeficiency diseases, an overview of genetic and metabolic diseases, and pathophysiology of the musculoskeletal and nervous systems.
PHYT 5018 Pharmacology
1.0 Semester Credit Hour
This course covers basic principles of pharmacology; impact of drugs on cardiovascular, respiratory, musculoskeletal, and neurological systems; and drug therapy for infection, cancer/ aids, and pain.

PHYT 5019 Neuroscience II
3.0 Semester Credit Hours
The neurophysiology, neuroanatomy, and neuropathology of motor systems and higher functions of the brain (e.g., memory, cognition, and language) are studied in this course. Motor functions of the central and peripheral nervous system components of the motor and sensory functions are discussed in the context of understanding the effects of aging, trauma, and disease.

PHYT 5021 Clinical I
8.0 Semester Credit Hours
This course is an eight-week clinical rotation in a physical therapy setting in one of the following areas: acute care, orthopedics, or rehabilitation with the purpose of having the student work towards entry-level competence in each type of setting. Emphasis is on development and practice of professional and selected physical therapy patient treatment skills for each of the specified areas of acute care, orthopedics, and rehabilitation.

PHYT 5091 Special Topics
0.5–4.0 Semester Credit Hours (varies per topic)
This course will be arranged through Department faculty. The course topics vary according to student interest. Semester hours are variable and credit hours will be assessed per topic. The course could be offered any time during the third year (MPT-III), fall, spring, or summer.

PHYT 6001 Orthopedics Case Studies
2.0 Semester Credit Hours
The purpose of this course is to provide the student opportunities to integrate information, from a variety of sources, which would enable optimal management of a patient requiring physical therapy. The course will be taught from a case report approach, with the emphasis on developing an integrated physical therapy plan of care. Topics may include multidisciplinary management, psychological factors influencing patient care, community-based resources, cultural issues, patient and family education, and socioeconomic factors. The patient case studies in this course will emphasize orthopedic problems.

PHYT 6002 Orthopedics I
4.0 Semester Credit Hours
This course covers physical therapy evaluation and treatment of disorders affecting the musculoskeletal system due to trauma and disease across the life span; comparisons of the philosophy and application of musculoskeletal evaluation and treatment techniques advocated by major orthopedic manual therapists; and an emphasis on incorporating assessment of joint integrity into total patient evaluation and patient management in orthopedic surgical and nonsurgical situations.

PHYT 6005 Medical Lectures
3.0 Semester Credit Hours
The medical management of patients with musculoskeletal disorders, commonly seen by the physical therapist, will be presented by physicians. Physicians and dentists will discuss how they arrive at a medical diagnosis for a patient and their subsequent medical plans.

PHYT 6007 Orthotics
1.5 Semester Credit Hours
This course presents the basic principles of orthotic evaluation, prescription, application, training, and management. Emphasis is on biomechanical assessment of the spine, lower extremity, upper extremity, and pediatric considerations, as well as miscellaneous techniques such as taping and casting. Emphasis will be on the development of therapeutic rationales to include adjunct physical therapy interventions. Development of problem-solving abilities will be enhanced via case studies. Psychomotor skills will be promoted through lab activities. Multidisciplinary interaction will be fostered through the participation of certified orthotists, occupational therapists, licensed athletic trainers, and durable medical equipment vendors.

CSBL 6010 Anatomy II
1.5 Semester Credit Hours
Students will be given the opportunity to perform cadaver dissection in this course, with emphasis on the dissection of the musculoskeletal, cardiopulmonary, and neuromuscular systems. This course will allow the student opportunity to review the structure/function relationships of the body and how alteration in those relationships can lead to dysfunction. This course will be taught in close conjunction with PHYT 6116 Management of the Neurological Patient II, PHYT 6114 Orthopedics II, and PHYT 6112 Differential Diagnosis. Human materials fee: $300.

PHYT 6011 Electrophysical Agents
3.5 Semester Credit Hours
This course presents the physical principles, physiological effects, therapeutic uses and clinical application of therapeutic heat and cold, mechanical energy, electrical stimulation, electrophysiological testing, biofeedback, and photic energy.

PHYT 6012 Prosthetics
1.5 Semester Credit Hours
This course will provide an overview of the basic principles for evaluation and management of amputees, to include lower extremity, upper extremity, and pediatrics populations. An understanding of the primary causes of prosthetic intervention along with preventative care will be detailed. A familiarity with the surgical procedures, postoperative care regimens, and long-term management will be covered for the most common levels of amputation by way of a case-study approach, the latest componentry, fitting decisions, and prosthetic training will be relayed via actual patient evaluation, interaction technology, and videotaped patient presentations. Multidisciplinary interaction will be fostered via participation of general and orthopaedic surgery, physical medicine, and certified prosthetists from the community.

PHYT 6013 Cardiopulmonary Rehabilitation
3.0 Semester Credit Hours
Provides students the opportunity to acquire the basic science and clinical foundation required for the evaluation and treatment of disorders affecting the cardiac and respiratory systems. Emphasis is on the interpretation of evaluative results and application of specific treatment procedures for comprehensive physical therapy management. The management of disorders typically considered to be age specific (e.g., congenital heart defects, arteriosclerotic heart disease, juvenile vs. adult onset asthma) will be discussed.
This course is an eight-week clinical rotation in a physical therapy setting in one of the following areas: acute care, orthopedics, or rehabilitation with a purpose of having the student work towards entry-level competence in each type of setting. Emphasis is on development and practice of professional and selected physical therapy patient treatment skills for each of the specified areas of acute care, orthopedics, and rehabilitation.

This course provides the student with the opportunity to plan, implement, and evaluate teaching/learning experiences within the context of the didactic and clinical physical therapy educational program. Students will be assigned to opportunities to participate in orthopedics, neuro-rehabilitation, patient care, and/or anatomy courses.

This course will give the student an opportunity to provide beginning level examination and management of patients with neurological and metabolic dysfunction introduced in Management of Neurological Patient I, i.e., persons with spinal cord injury and cerebral vascular accident using a case study format. The focus will be on patient examination and development of an integrated plan of care. Topics may include interdisciplinary management, cultural issues, psychological factors, socioeconomic issues, community-based resources, and patient family education.

This course will give the student an opportunity to provide intermediate level examination and management of patients with neurological and metabolic dysfunction as introduced in Management of Neurological Patient II, i.e., persons with cerebral palsy, brain injury, Parkinson’s disease. The case study format will be used to foster interdisciplinary management.

The purpose of this course is to discuss the components of a successful presentation and to examine the processes and procedures required for submission of a scientific paper for publication. During this course the students will have the opportunity to present their findings, fostering integration of the research process.

This course will cover current trends and problems in the administration of clinical physical therapy departments which affect technical and professional personnel. Designed to place emphasis on communication, motivation, leadership, and supervision of small groups.
interdisciplinary service provision and community and accessibility issues. The course is appropriate for graduate students interested in serving persons with developmental disabilities. This is not a required course but rather an elective course that will provide the opportunity for PT students to meet their elective requirement.

**PHYT 5024  Brain Injury Clinical Elective**  
*4.0 Semester Credit Hours*

This four-week elective in clinical education is designed to permit observation and participation in actual patient evaluation and treatment of patients in a center for brain injury. The student will be exposed to inpatient and/or outpatient venues in which assessment and treatment of post-head trauma is the focus of care.

**PHYT 5025  Gait Analysis Clinical Elective**  
*4.0 Semester Credit Hours*

This four-week elective affiliation in clinical education is designed to permit observation and participation in kinematic analysis of human gait in an actual gait lab. The student will be exposed to inpatient and outpatient assessment of gait abnormalities and specific treatment protocols according to results of gait analysis.

**PHYT 5026  Acute Care Clinical Elective**  
*4.0 Semester Credit Hours*

This four-week elective in clinical education is designed to permit observation and participation in actual patient evaluation and treatment in an acute care setting. The student will be exposed to assessment and treatment of inpatients residing on various services within a hospital. The student is expected to formulate a basis and progressive understanding of evaluative and therapeutic procedures, which result in achieving clinical and functional goals for the patient with various acute care diagnoses.

**PHYT 5027  Occupational Medicine Clinical Elective**  
*4.0 Semester Credit Hours*

This four-week elective in clinical education is designed to permit observation and participation in actual patient evaluation and treatment in a center for occupational medicine. The student will be exposed to outpatient venues in which referral, assessment and treatment of injuries associated with workers’ compensation claims are the predominant caseload.

**PHYT 5028  Orthotics/Prosthetics Clinical Elective**  
*4.0 Semester Credit Hours*

This four-week elective in clinical education is designed to permit observation and participation in actual patient evaluation and treatment of patients requiring orthotic and/or prosthetic interventions. The student will be exposed to inpatient and outpatient practice in which assessment and treatment of this specific clientele will be featured.

**PHYT 5029  Adult Neuro Rehab Clinical Elective**  
*4.0 Semester Credit Hours*

This four-week elective in clinical education is designed to permit observation and participation in actual patient evaluation and treatment of patients requiring inpatient and outpatient neurological rehabilitation. The student will be exposed to inpatient and outpatient practice in which assessment and treatment of this specific clientele will be featured.

**PHYT 5060  Team Approach to Pain Management: An Interdisciplinary Elective**  
*1.0 Semester Credit Hour*

This course provides an overview in current concepts of pain management from clinical interdisciplinary health care team perspective. Content includes classification characteristics and assessment of pain and interventions for pain control. Emphasis is on interdisciplinary interaction regarding actual case studies.

**PHYT 6901  Wound Care Clinical Elective for Physical Therapy**  
*4.0 Semester Credit Hours*

This four-week elective in physical therapy clinical education is designed to permit observation and participation in actual patient evaluation and treatment in a wound care setting. The student will be exposed to assessment and treatment of various kinds of wounds in an acute care/outpatient care facility.

**PHYT 6902  Manual Therapy Clinical Elective for Physical Therapy**  
*4.0 Semester Credit Hours*

This four-week elective in physical therapy clinical education is designed to enable the senior student intense observation and supervised physical therapy treatments via manual therapy interventions. It is expected that the student will be introduced to a particular “school of thought” while, at the same time, be exposed to variant approaches that are part of current, accepted manual therapy practice. The student will be expected to recognize the need for manual therapy treatment as well as understand the associated interventions that prepare the patient for manual therapy as well as supplement in order to comprise a comprehensive care plan. The student must also recognize the validity of these physical interventions as indicated by functional outcomes.

**PHYT 6903  Administration Clinical Elective for Physical Therapy**  
*4.0 Semester Credit Hours*

This four-week elective in physical therapy clinical education is designed to permit a senior student to observe and participate in the administrative oversight of a physical therapy department—either within a hospital, outpatient facility, private practice, or at a regional office of a corporate entity. The intern will “shadow” the physical therapist who will be primarily engaged in administrative tasks. The student would assist in administrative projects as designated by their administrative clinical instructor, which may involve various operational, personnel, quality assurance, and marketing functions.

**PHYT 6904  Pediatrics Clinical Elective for Physical Therapy**  
*4.0 Semester Credit Hours*

This four-week elective in physical therapy clinical education is designed to permit observation and participation in actual patient evaluation and treatment in a pediatric setting. The student will be exposed to physical therapy assessment and treatment of pediatric patients with various diagnoses in either a hospital, outpatient facility, school, or home environment. The student is expected to formulate a basic and progressive understanding of evaluative and therapeutic procedures which result in physical therapy clinical and functional goals for the pediatric patient.
PHYT 6905  Sports/Ortho Clinical Elective in Physical Therapy

4.0 Semester Credit Hours

This four-week elective in physical therapy clinical education is designed to permit actual patient evaluation and treatment in a physical therapy sports/ortho setting. The student will be responsible for assessment of patients with various diagnoses involving sports/ortho injuries. The student must demonstrate ability to perform competent evaluation as well as develop accurate care plans and follow through on performance of actual physical therapy treatment that accomplishes clinical and functional goals. Settings for this elective will include the athletic field, outpatient clinic, and outpatient surgical center, as applicable and available.

PHYT 6906  Home Health Elective in Physical Therapy

4.0 Semester Credit Hours

This four-week elective in physical therapy clinical education is designed to permit actual patient evaluation and treatment in a physical therapy home health setting. The student will be responsible for assessment of physical therapy patients with various diagnoses permitting continuing care in the patient’s home environment. The student must demonstrate ability to perform competent evaluation as well as developing care plans and performance of actual treatment towards clinical and functional goals. Supervision of PTA (as indicated) and other assistive personnel will also be a performance indicator for satisfactory completion of this clinical elective.

PHYT 6907  Hand Therapy Clinical Elective in Physical Therapy

4.0 Semester Credit Hours

This four-week elective in clinical education is designed to permit observation and participation in actual patient evaluation and treatment in a physical therapy orthopaedic hand-therapy setting. The student will be exposed to assessment and treatment of upper-extremity/hand patients with various orthopaedic diagnoses in an outpatient setting. The student is expected to formulate a basic and progressive understanding of evaluative and therapeutic procedures which result in clinical and functional goals for the patient with upper-extremity involvement.

PHYT 6908  Orthopedics Clinical Elective in Physical Therapy

4.0 Semester Credit Hours

This four-week elective in clinical education is designed to permit actual patient evaluation and treatment in an outpatient therapy facility. The student will be responsible for physical therapy assessment of patients with various orthopaedic diagnoses as well as developing care plans and actual treatment toward clinical and functional goals. Supervision of PTA and other assistive personnel will also be a performance indicator to be demonstrated for satisfactory completion of this clinical elective.

PHYT 6909  Aquatics Clinical Elective

4.0 Semester Credit Hours

This four-week elective in clinical education is designed to permit actual patient evaluation and treatment in an aquatic therapy facility. The student will be responsible for assessment of patients for this treatment modality as well as developing care plans and actual treatment toward clinical and functional goals. Supervision of PTA and other assistive personnel will also be a critical performance indicator for satisfactory completion of this clinical elective.

Continuation, Probation, Dismissal

Continuation as a Physical Therapy student is dependent on maintenance of a minimum cumulative grade point average of 3.0 (B) for all courses taken while enrolled in the program. A student whose cumulative grade point average falls below 3.0 will be subject to academic probation. While on probation, a student must maintain a B average in those courses for which he or she is registered or be considered for dismissal. A student who receives a grade of D or F in any semester will also be subject to probation or dismissal. All decisions concerning probation or dismissal will be based on recommendations from the Committee on Allied Health Studies (CAHS) to the Dean of the School of Allied Health Sciences. The Committee may recommend: dismissal, academic probation, repetition of the course when next offered, repetition of the year/semester, or other actions as deemed appropriate. If repetition of a course when next offered is recommended, the student may not continue taking subsequent courses in the curriculum until that course is successfully completed. The student who has been dismissed may be readmitted for further study by petition from the CAHS. The request will be approved or disapproved by the Dean. Under no circumstances will a student on probation be awarded a degree.

Estimated Program Costs

Total costs for in-state tuition and fees, parking permits, health and liability insurance, etc. are approximately $11,900. In addition, costs for other expenses, such as textbooks, course manuals, and supplies, are approximately $2,600 for the entire program. Travel and living expenses for local and out-of-town clinical experiences are not included in this estimate.

Non-resident students are subject to additional tuition costs, which may be found under “Financial Information” in this Catalog.
PHYSICIAN ASSISTANT STUDIES

Physician assistants (PAs) are health care professionals licensed to provide health care and medical services with physician supervision. Within the physician/PA relationship, physician assistants exercise autonomy in medical decision making and provide a broad range of diagnostic and therapeutic services. The physician assistant’s practice may also include education, research, and administrative services. The responsibilities of a physician assistant are dynamic and depend on the practice setting, the education and experience of the PA, and state laws and regulations. Physician assistants work in almost every medical and surgical specialty with the majority being in primary care and a large percentage in smaller communities and underserved areas. A commitment of caring and service to those whose need is greatest is the foundation of the physician assistant profession.

The UTHSCSA Physician Assistant Studies Program is fully accredited by the Accreditation Review Commission.

Master of Physician Assistant Studies Program

The UTHSCSA Physician Assistant Program is an intense didactic and clinical program designed to prepare primary care physician assistants to meet the needs of the people of South Texas. The program begins each August and runs continuously for 33 months. The didactic component of the curriculum is 21 months in length and consists of classroom, laboratory, and clinical preparation. This instruction is designed to prepare the student to successfully complete the 12 months of supervised clinical practice phase. The supervised clinical practice phase is oriented to primary care and occurs in sites throughout South Texas. All students must complete a minimum of two rural rotations and must be prepared to assume the expense for this activity.

Master of Physician Assistant Studies (MPAS) students may be eligible to receive a Bachelor of Science in Health Care Sciences (BSHCS) after successful completion of the first-year fall and spring semesters in the program. To continue in the program, students must have a 2.75 GPA in the program and receive faculty approval. On satisfactory completion of the full 33-month curriculum and with approval of the faculty, a Master of Physician Assistant Studies degree is awarded. Graduates are eligible to sit for the certifying examination offered by the National Commission for Certification of Physician Assistants. Certification by this examination is required for licensure in all states.

Admission and Application

Information about application and admission to the Physician Assistant Program is detailed in the Applicant Viewbook of the School of Allied Health Sciences and is available through the Office of the Registrar. Information is also available on the department’s Web site at http://www.uthscsa.edu/sah/pastudies.

The application period is September 1 to December 1 of each year for the class matriculating in the following August. All required admissions information and documents must be submitted to the Registrar by the deadline dates. Official transcripts of college work completed during the fall semester must be received no later than January 15. Ninety (90) hours of prescribed transferable college work must be completed with an overall GPA of 2.60 on a 4.0 scale, a GPA of 2.60 for all prerequisites, a GPA of 2.60 for all science course work, and a GPA of 2.60 for the last 30 hours of attempted college work. All science courses must be for science majors and include the appropriate laboratory. Applicants who have a prior degree may be exempt from some of the prerequisite courses. See the Allied Health Applicant Viewbook for a list of courses that are exempt. (Students who have a previous degree and who are exempt from prerequisite courses may not qualify for the BSHCS degree which will be awarded concurrently with the MPAS degree.) A limited number of applicants will be invited for a personal interview. Selection of applicants to be interviewed and for admission to the program is based on a number of factors, including, but not limited to: work/life/medical experience in a rural or underserved area or with an underserved population; bilingual ability; understanding of the physician assistant profession as demonstrated by written essay and by evidence of shadowing; leadership potential and evidence of service; references; any prior medical experience; and written and verbal communication ability and skill. Final selection is based on the overall evaluation of the candidate and personal interview.

Applicants are encouraged to attend our Applicant Orientation which is offered one Saturday per month, June through October. Please call the department at 210-567-8810 or e-mail pastudies@uthscsa.edu for reservations.

PLEASE NOTE

- All interested applicants should review the “Student Technical Standards” available at the Web site, or a copy can be requested from the department’s office. These standards outline the work conditions for students and the physical requirements for meeting those conditions.
- Prior-year applicants must submit an updated application. Questions about reapplication should be directed to the Registrar’s Office.
Master of Physician Assistant Studies Curriculum

Preprofessional Educational Requirements
To apply, the applicant must have completed a minimum of 90 credit hours, with a minimum overall GPA of 2.60, and a GPA of 2.60 for all prerequisites, all science coursework, and for the last 30 hours of college work. The preprofessional course of study may be completed at any regionally accredited United States college or university.

Professional Educational Requirements
All coursework in the basic health sciences and clinical sciences is conducted at the UTHSCSA campus. Clinical rotations/experiences of four weeks duration are conducted at health care facilities in various locations in San Antonio and throughout South Texas.

First Year

<table>
<thead>
<tr>
<th>Fall</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anatomy</td>
<td>6.5</td>
</tr>
<tr>
<td>Introduction to the Profession</td>
<td>2.0</td>
</tr>
<tr>
<td>Nutrition</td>
<td>3.0</td>
</tr>
<tr>
<td>Clinical Laboratory</td>
<td>3.0</td>
</tr>
</tbody>
</table>

Spring

<table>
<thead>
<tr>
<th></th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physiology/Patho</td>
<td>6.5</td>
</tr>
<tr>
<td>Clinical Laboratory</td>
<td>1.0</td>
</tr>
<tr>
<td>Ethics</td>
<td>1.0</td>
</tr>
<tr>
<td>Behavioral Medicine</td>
<td>2.0</td>
</tr>
<tr>
<td>Intro to Clinical Practice</td>
<td>1.0</td>
</tr>
<tr>
<td>Patient Evaluation I</td>
<td>3.0</td>
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</table>

First-Year Total 29.0

Second Year

<table>
<thead>
<tr>
<th>Summer</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultural Issues in Health</td>
<td>2.0</td>
</tr>
<tr>
<td>Problem Based Learning I</td>
<td>1.0</td>
</tr>
<tr>
<td>Patient Evaluation II</td>
<td>1.0</td>
</tr>
<tr>
<td>PMCH</td>
<td>2.0</td>
</tr>
</tbody>
</table>

Fall

| Introduction to Clinical Sciences I | 8.0          |
| Pharmacology I                      | 3.0          |
| Problem Based Learning II           | 1.0          |
| Clinical Skills I                   | 3.0          |
| Scientific Inquiry                  | 2.0          |
| BLS                                   | 0.0          |

Spring

| Introduction to Clinical Sciences I | 10.0         |
| Clinical Skills II                  | 2.0          |
| Pharmacology II                     | 2.0          |
| ACLS                                 | 0.5          |
| Problem Based Learning III           | 1.0          |

Second-Year Total 38.5

Third Year

Summer, Fall, Spring:
Supervised Clinical Practice and Senior Seminars
There are 12 rotations of supervised clinical practice. Each rotation consists of four weeks. Students register for rotation in I–XII order, but the type of experience varies depending on the specialty of the rotation assignment. These rotations are completed in a 52-week period. Each week consists of 40+ hours of clinical contact.

<table>
<thead>
<tr>
<th>Rotation</th>
<th>Credit Hours</th>
<th>Duration (weeks)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supervised Clinical Practice I</td>
<td>4.0</td>
<td>4</td>
</tr>
<tr>
<td>Supervised Clinical Practice II</td>
<td>4.0</td>
<td>4</td>
</tr>
<tr>
<td>Supervised Clinical Practice III</td>
<td>4.0</td>
<td>4</td>
</tr>
<tr>
<td>Supervised Clinical Practice IV</td>
<td>4.0</td>
<td>4</td>
</tr>
<tr>
<td>Supervised Clinical Practice V</td>
<td>4.0</td>
<td>4</td>
</tr>
<tr>
<td>Supervised Clinical Practice VI</td>
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<td>4</td>
</tr>
<tr>
<td>Supervised Clinical Practice VII</td>
<td>4.0</td>
<td>4</td>
</tr>
<tr>
<td>Supervised Clinical Practice VIII</td>
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</tr>
<tr>
<td>Supervised Clinical Practice IX</td>
<td>4.0</td>
<td>4</td>
</tr>
<tr>
<td>Supervised Clinical Practice X</td>
<td>4.0</td>
<td>4</td>
</tr>
<tr>
<td>Supervised Clinical Practice XI</td>
<td>4.0</td>
<td>4</td>
</tr>
<tr>
<td>Supervised Clinical Practice XII</td>
<td>4.0</td>
<td>4</td>
</tr>
</tbody>
</table>

Total 48.0 hours

Senior Seminars
Senior Seminars are conducted at the end of three semesters of the clinical year. These overlap with the last one or two days of the last rotation.

| Practice Issues | 0.5          | 8 hrs.         |
| Policy/Management Issues | 0.5          | 8 hrs.         |
| Transition to Practice | 0.5          | 8 hrs.         |

Total 1.5 hours

Third Year Total 49.5 hours

Estimated Program Costs
In addition to tuition and required fees of approximately $13,600, students in the Physician Assistant Studies Program must purchase uniforms, protective eyewear, equipment, and textbooks essential to the program. The estimated cost of these items is $5,200. Students admitted to the program should be prepared to meet these costs at the time of registration. All students are required to have a laptop computer with Internet access; estimated cost is approximately $2,500. Non-resident students are subject to additional tuition costs, which may be found under “Financial Information” in this Catalog.

Students are responsible for personal expenses incurred in traveling to clinical rotation sites outside of San Antonio throughout South Texas. Such rotations are scheduled periodically during the second year. Expenses may include lodging and bus fare and/or automobile mileage. It is estimated that $2,500 should be budgeted toward such transportation/lodging costs. All students will have at least two rural rotations.

Upon graduation, the student is eligible to sit for the national certification examination offered by the National Commission on Certification of Physician Assistants. This examination is required as part of the application for licensure to practice in all states.
Advancement, Probation, Dismissal

The Promotions Committee, a subcommittee of the Committee on Allied Health Studies, recommends a student’s promotion status based upon (1) course grades, (2) attendance record, and (3) professional behavior. In addition, the Committee will assess extenuating circumstances, on an individual basis, that may have affected a student’s progress.

The grade of C is the minimum acceptable grade during the first year of coursework. Upon successful completion of the first year of coursework a baccalaureate degree in Health Care Science will be awarded. To continue in the program, students must have an overall average of 2.0 for the first year and receive faculty recommendation.

For unconditional advancement after the first year, a student must (1) achieve a minimum grade point average of 2.0 each semester, (2) successfully complete all prescribed courses and semester requirements, and (3) earn a grade of at least a C in each course.

All first-year courses must be successfully completed prior to the student’s advancement to the second year, and all second-year courses successfully completed prior to beginning the clinical rotations. Graduation is contingent upon successful completion of the full 33-month curriculum.

A student who earns an unacceptable grade in any Physician Assistant Studies course may be subject to dismissal from the program or required to repeat the entire academic year. When repeating the academic year, or any portion thereof, the student will be placed on academic probation and must earn an acceptable grade in each course in order to remain in the program.

Dismissal from the program may be recommended if a student earns an unacceptable grade in (1) one or more courses in one semester, (2) a course being repeated or remediated, (3) any course taken while in the process of repeating the academic year, or (4) any course taken while on probation, or (5) for professional misconduct at any time during the program.

Course Descriptions

Supervised Clinical Practice is accomplished at sites throughout South Texas. Rotations vary in length from 4–8 weeks and are primary-care based. All students complete a Community Medicine project. Students will return to campus every 16 weeks for a one-week seminar on such subjects as practice issues, management issues, billing and coding, job-hunting skills, and contract negotiations. Rotations require long, irregular hours and are physically and mentally demanding. Rotations at rural sites are required and students must be prepared for the costs involved.

PHAS 4101 Community Medicine I

4.0 Semester Credit Hours

This is a four-week clinical practicum during which students (normally teams of four, plus family practice residents) will go into an assigned community to conduct needs assessment. This may take the form of patient interviews, chart reviews, interviews with health care professionals in the community, or of other forms deemed necessary and appropriate. The teams will have the opportunity to develop a project to improve health care in the community over the remainder of the practicum and the ensuing months. Community Medicine II will allow implementation of the project.

PHAS 4102 Community Medicine II

4.0 Semester Credit Hours

A continuation of Community Medicine I, normally 4 to 10 months later, this is an implementation of the health care project developed during Community Medicine I. Students will have the opportunity to return to the community and put their project in action. Assessment tools will be left in place for long-term assessment of the project goals.

PHAS 4103 Surgery I

4.0 Semester Credit Hours

This is a four-week clinical practicum during which the student will have the opportunity to gain practical experience and assume patient-care responsibility under the direct supervision of a licensed practitioner. Students will work both inpatient and outpatient settings and are expected to take call and to participate in surgical procedures. This practicum is usually accomplished in a surgical department and focuses on general surgical procedures.

PHAS 4104 Surgery II

4.0 Semester Credit Hours

This is a four-week clinical practicum during which the student will have the opportunity to gain practical experience and assume patient-care responsibility under the direct supervision of a licensed practitioner. Students will work primarily in an inpatient or outpatient setting and are expected to take call and to participate in surgical procedures. This practicum is usually accomplished in a surgical department with either a general surgical focus or the student may elect a specific surgical subspecialty.

PHAS 4105 OB/GYN

4.0 Semester Credit Hours

This is a four-week clinical practicum during which the student will have the opportunity to gain practical experience and assume patient-care responsibility under the direct supervision of a licensed practitioner. Students will work primarily in an outpatient setting but may be required to take call and to participate in hospital rounds. This practicum is usually accomplished in an OB/GYN department but may be held in a rural, inner-city, or family medicine setting.

PHAS 4106 Pediatrics

4.0 Semester Credit Hours

This is a four-week clinical practicum during which the student will have the opportunity to gain practical experience and assume patient-care responsibility under the direct supervision of a licensed practitioner. Students will work primarily in an outpatient setting but may be required to take call and to participate in hospital rounds. This practicum is usually accomplished in a pediatric department or clinic but may be held in a rural, inner-city, or family medicine setting.

PHAS 4107 Ambulatory Care

4.0 Semester Credit Hours

This is a four-week clinical practicum during which the student will have the opportunity to gain practical experience and assume patient-care
Physician Assistant Studies — School of Allied Health Sciences

responsibility under the direct supervision of a licensed practitioner. Students will work primarily in an outpatient setting but may be required to take call and to participate in hospital rounds. This practicum may be accomplished in a rural or inner-city facility or in an internal medicine or family medicine department.

PHAS 4108 Medical Inpatient Service
8.0 Semester Credit Hours
This is an eight-week clinical practicum during which the student will have the opportunity to gain practical experience and assume patient-care responsibility under the direct supervision of a licensed practitioner. Students will work primarily in an inpatient setting and are required to take call and participate in hospital care plans. This practicum is accomplished in an inpatient internal medicine setting.

PHAS 4109 Primary Care
8.0 Semester Credit Hours
This is an eight-week clinical practicum during which the student will have the opportunity to gain practical experience and assume patient-care responsibility under the direct supervision of a licensed practitioner. Students will work primarily in an outpatient setting but may be required to take call and participate in hospital rounds. This practicum is usually accomplished in a rural or inner-city facility, but may be in an internal medicine or family medicine department.

PHAS 4110 Emergency Medicine
4.0 Semester Credit Hours
This is a four-week clinical practicum during which the student will have the opportunity to gain practical experience and assume patient-care responsibility under the direct supervision of a licensed practitioner. Students will work primarily in emergency medicine but may be required to take call and participate in hospital rounds. This practicum is usually accomplished in a hospital emergency room.

PHAS 4111 Medical Elective I
4.0 Semester Credit Hours
This is a four-week clinical practicum during which the student will have the opportunity to gain practical experience and assume patient-care responsibility under the direct supervision of a licensed practitioner. Students will work primarily in an inpatient setting but may be required to take call and participate in hospital rounds. This practicum may be in any general medicine or medical subspecialty, including primary care.

PHAS 4112 Elective II
4.0 Semester Credit Hours
This is a four-week clinical practicum during which the student will have the opportunity to gain practical experience and assume patient-care responsibility under the direct supervision of a licensed practitioner. Students will work primarily in an outpatient setting but may be required to take call and participate in hospital rounds. This practicum may be in any general medicine or medical subspecialty, including primary care, or may be in any general surgery or surgical subspecialty. Location depends on the focus the student selects.

PHAS 4113 Senior Seminar I (Practice)
1.0 Semester Credit Hour
Senior Seminar I (Practice Issues): All senior seminars will include clinical practicum written examinations, case reports, presentations, updates, and lectures on relevant topics. Practice Issues Senior Seminar will cover such issues as personal interaction; dealing with difficult patients (e.g., dissatisfied, demanding, suicidal, physically or mentally challenged, non-English speaking); and discussion of occupational medicine issues, ADA, sexual harassment in the workplace.

PHAS 4213 Senior Seminar II (Management)
1.0 Semester Credit Hour
Senior Seminar II (Management Issues): All senior seminars will include clinical practicum written examinations, case reports, presentations, updates, and lectures on relevant topics. Management Issues Senior Seminar will cover dictation, medical records, office staffing, an introduction to Medicare/Medicaid, coding, and billing.

PHAS 4313 Senior Seminar III (Transition)
1.0 Semester Credit Hour
Senior Seminar III (Transition Issues): All senior seminars will include clinical practicum written examinations, case reports, presentations, updates, and lectures on relevant topics. Transition Issues Senior Seminar will cover job search, resume, contract negotiations, certification examination, and licensure procedures.

PHAS 5000 Introduction to the Profession
2.0 Semester Credit Hours
This course is an overview of the physician assistant profession. The course will provide students with an opportunity to develop an understanding of the profession to include history, social issues, liability, educational philosophy, certification/licensure requirement, and professional concepts/issues. Preclinical experiences will include clinical observations, clinical activity, and exposure to the wide range of physician assistant practices. There is an instructional technology fee for this course.

PHAS 5001 Patient Evaluation I
3.0 Semester Credit Hours
This course provides the student with an opportunity to develop a theoretical and clinical basis for assessment of the patient. The process, in which a physician assistant utilizes a comprehensive physical, psychosocial, and cultural assessment across the lifespan to gather specific data relevant to common health problems, is demonstrated. Faculty will facilitate laboratory and clinical experiences that will focus on assessment of patients and presentation of findings in a variety of settings. There is an instructional technology fee for this course.

PHAS 5002 Ethical Issues
1.0 Semester Credit Hour
This interdisciplinary course will provide students with an opportunity to develop an understanding of the ethical issues facing allied health professionals. Topics include responsibilities of the health care practitioner, life and death decisions, patient confidentiality, substance abuse, whistle blowing, and informed consent. Ethics in research and other critical issues related to health care problems also will be addressed. Collaborative activities and simulated cases will be used to enhance discussion among students. There is an instructional technology fee for this course.

PHAS 5003 Behavioral Medicine
2.0 Semester Credit Hours
This course provides the student with an opportunity to develop an understanding of human behavior by providing an overview of major behavioral disease processes and differentiation criteria to
include disease presentation, physical examination findings, laboratory testing, and therapeutic approaches. There is an instructional technology fee for this course.

PHAS 5004 Introduction to Clinical Practice
1.0 Semester Credit Hour
This course provides the student with an opportunity to experience clinical practice and further develop an appreciation for the art and science of medicine as it relates to physician assistant practice. Activities will range from observation to participation in patient care. Basic problem solving, group discussion, and literature review will be included. There is an instructional technology fee for this course.

PHAS 6001 Cultural Issues in Health
2.0 Semester Credit Hours
The student will have an opportunity to develop knowledge and understanding of the topics and issues influencing the health of culturally diverse people with a particular emphasis on the South Texas region. Alternative and complementary health beliefs will be discussed. Medical Spanish will be introduced. There is an instructional technology fee for this course.

PHAS 6002 Problem Based Learning I
1.0 Semester Credit Hour
This course will introduce the student to problem-based learning. The student will have an opportunity to learn and develop problem-based learning skills as they apply to patient problems and health care issues. Types of learning events will include small-group activity, individual study and literature review, and medical problem solving based on student knowledge and comprehension through application, analysis, synthesis, and evaluation. There is an instructional technology fee for this course.

PHAS 6003 Patient Evaluation II
1.0 Semester Credit Hour
A continuation of Patient Evaluation I, the student will have an opportunity to apply those skills taught in PE I to include physical examination, medical history, patient education, documentation, and medical record keeping. Faculty will facilitate laboratory and clinical experiences that focus on assessment of patients and presentation of findings in a variety of settings. There is an instructional technology fee for this course.

PHAS 6004 Preventive Medicine/Community Health
2.0 Semester Credit Hours
The student will have an opportunity to develop an understanding and knowledge of epidemiology and preventive medicine across a number of topics. An introduction to community health, with an emphasis on needs assessment and project development, will be done. There is an instructional technology fee for this course.

PHAS 6010 Pharmacology I
3.0 Semester Credit Hours
The student will have an opportunity to develop an understanding and knowledge of the pharmacological basis of therapeutics with special emphasis on the biochemical and physiological functions in disease. Majors areas covered include drugs active in the cardiovascular, autonomic, and central nervous systems. General principles of drug action and specific coverage of drugs used in the treatment of bacterial, viral, and parasitic diseases are provided. There is an instructional technology fee for this course.

PHAS 6011 Problem Based Learning II
1.0 Semester Credit Hour
This course is a continuation of Problem Based Learning I. There is an instructional technology fee for this course.

PHAS 6012 Clinical Skills I
2.0 Semester Credit Hours
The student will have the opportunity to develop skill and expertise in the clinical techniques generally used by physician assistants. Practical instruction on patient care skills will be provided with direct experiential practice on models.

PHAS 6013 Scientific Inquiry
3.0 Semester Credit Hours
This course is a general introduction to research design, statistical reasoning, and interpretation of medical/scientific literature. Topics include scientific method, theory, development of research questions, issues of measurement, models of experimental and non-experimental designs, and an overview of parametric and non-parametric statistical techniques. All topics will be in reference to understanding the literature and to evidence for practice decisions. The learner will have an opportunity to critically analyze medical and scientific literature/research. There is an instructional technology fee for this course.

PHAS 6014 Pharmacology II
2.0 Semester Credit Hours
A continuation of Pharmacology I, the student will have an opportunity to develop an understanding and knowledge of the actions and therapeutic uses of drugs. The topics include principles of pharmacology and pharmacokinetics. Topics will center on drug action, autonomic and cardiovascular pharmacology, neuropharmacology, endocrine pharmacology, GI and respiratory pharmacology, and an introduction to chemotherapy and toxicology. Special topics will include basics in chemotherapy and toxicology. There is an instructional technology fee for this course.

PHAS 6015 Clinical Skills II
2.0 Semester Credit Hours
This course is a continuation of Clinical Skills I. There is an instructional technology fee for this course.

PHAS 6016 Problem Based Learning III
1.0 Semester Credit Hour
This course is a continuation of Problem Based Learning I & II. There is an instructional technology fee for this course.
RESPIRATORY CARE

Respiratory care, also known as respiratory therapy, is the allied health profession responsible for caring for patients with deficiencies and abnormalities of the cardiopulmonary system. Areas of respiratory care include basic care (oxygen, aerosol, and chest physiotherapy), critical care (ventilator management and physiologic monitoring), perinatal and pediatric respiratory care, cardiopulmonary diagnostics, pulmonary laboratory, alternate site care, home care, pulmonary rehabilitation, and disease management.

The respiratory therapist often sees a diverse group of patients ranging from newborn and pediatric patients to adults and the elderly. Disease states or conditions often requiring respiratory care include asthma, emphysema, chronic obstructive lung disease, pneumonia, cystic fibrosis and infant respiratory distress syndrome, shock, trauma, and postoperative surgical care. Respiratory therapists also are involved in many specialty areas in the hospital such as newborn labor and delivery, neonatal and pediatric intensive care units, pulmonary function laboratory, sleep laboratory, adult intensive care units, extracorporeal membrane oxygenation, EKG, and areas outside the hospital such as clinics, extended care facilities, and the home.

The baccalaureate-prepared respiratory therapist, as an advanced practitioner, is trained to deliver respiratory care in the hospital, home, and alternate care sites. B.S. degree program graduates are eligible to sit for the national board exams for certification as an entry-level respiratory therapist, to become registered as a respiratory therapist, and to take specialty examinations in perinatal/pediatrics and pulmonary function technology.

Bachelor of Science in Respiratory Care Program

The program in Respiratory Care, leading to a Bachelor of Science degree from UTHSCSA, requires a minimum of 150 semester credit hours of coursework, including a preprofessional phase, a professional phase, and clinical fieldwork. The lower-division, Preprofessional Phase Requirements, may be completed at any accredited college or university. Beginning in the fall of the junior year, the upper-division or Professional Phase Requirements consist of academic and clinical courses at UTHSCSA and within the community. The professional phase of the program is 22 1/2 months in length. The program is dedicated to clinical and academic excellence and includes more than 1,000 hours of in-hospital clinical practice. As a leadership program in respiratory care, the program is designed to provide graduates with the opportunity to gain the foundation needed to assume professional leadership roles in clinical practice, clinical specialty areas, research, education, and management.

Upon completion of the program, graduates are awarded a Bachelor of Science degree with a major in Respiratory Care and are eligible for the national board examinations in respiratory care as well as state licensure. Students may also receive a Certificate of Completion for the entry-level portion of the curriculum.

Accreditation

The Respiratory Care Program is accredited by the Committee on Accreditation for Respiratory Care (CoARC), 1248 Harwood Rd., Bedford, TX, 76021-5244, and the Commission on Accreditation of Allied Health Education Programs (CAAHEP), 515 N. State Street, Suite 7530, Chicago, IL 60610-4377.

Admission and Application

Information about admission and application to the program in Respiratory Care is detailed in the Applicant Viewbook of the School of Allied Health Sciences. In addition to 59 semester hours of prescribed program prerequisites at the lower-division level, applicants must have a minimum overall GPA of 2.0 and a grade no lower than C in preprofessional required courses. Application to the professional phase of the program is made through the Office of the Registrar before the deadline of May 15.

Advanced Standing in Respiratory Care

Individuals holding the Certified Respiratory Therapist (CRT) or Registered Respiratory Therapist (RRT) credentials awarded by the National Board for Respiratory Care (NBRC) are eligible for advanced standing in the Respiratory Care Program.

Individuals holding the CRT credential may be eligible to receive credit for 20 semester hours of coursework based on the CRT credential. These individuals may be eligible to attempt equivalency examinations for an additional 29 semester hours of coursework. All other admission and program requirements must be met.

Individuals holding the RRT credential may be eligible to receive 61 semester credit hours based on the RRT credential. Such individuals must enroll in and complete a minimum of 30.5 semester hours of coursework at UTHSCSA. Individuals holding the RRT credential must apply for admission to the program at least 60 days prior to the first day of the semester in which they wish to begin coursework at UTHSCSA. General education prerequisites may be waived for these individuals for admission to the program. All general education requirements must be completed prior to graduation and all other program requirements apply.
Three-Year Track
A three-year professional phase track is available for students who wish to reduce the required course work load in order to complete program prerequisites or meet other outside requirements. For more information on the three-year track, contact the department.

Curriculum

Preprofessional Phase Requirements
The Respiratory Care program requires a minimum of 59 hours of prescribed lower-division coursework as outlined in the Applicant Viewbook of the School of Allied Health Sciences.

Professional Phase
The professional phase of the program in Respiratory Care is completed at UTHSCSA in the junior and senior years.

Junior Year

<table>
<thead>
<tr>
<th>Semester</th>
<th>Credit Hours</th>
<th>Course Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Fall Semester</td>
<td></td>
<td>RESC 3001 Basic Respiratory Care Equipment</td>
<td>3.0</td>
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<td>RESC 3003 Introduction to Respiratory Care</td>
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<td>RESC 3005 Pharmacology</td>
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<td>RESC 3007 Cardiopulmonary Physiology</td>
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<td>RESC 3011 Patient Assessment</td>
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<td>RESC 3013 Disease Management, Rehabilitation, and</td>
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<td>Extended Care</td>
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<td></td>
<td></td>
<td>RESC 3015 Advanced Life Support and Airway Care</td>
<td>3.0</td>
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<td>RESC 3017 Pulmonary Disease</td>
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<td>RESC 3019 Clinical Practice I</td>
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<td>RESC 3023 Pulmonary Function Testing</td>
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<td>RESC 4001 Cardiopulmonary Technology</td>
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<td></td>
<td></td>
<td>RESC 4003 Pediatric and Neonatal Respiratory Care</td>
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<td></td>
<td>RESC 4005 Advanced Critical Care Monitoring</td>
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<tr>
<td></td>
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Advancement, Promotion, Dismissal
Professional courses (RESC prefix) in the Department are taught in a sequential manner in the junior and senior years. Each professional course in the program serves as the prerequisite for the subsequent course. Consequently, professional courses must be taken in sequence. Failure to successfully complete a professional course with a letter grade of C or better may result in the student’s being suspended or dismissed from the program. Students who are readmitted to the program at times other than the fall semester will pick up the sequence from the point of exit. Unless otherwise described in a given course syllabus, the minimum satisfactory grade for course credit is 75% (a letter grade of C), and all stipulated segments of a course must be passed by this standard. Students must demonstrate proficiency in all clinical skills presented in order to pass clinical courses.

During the program, if a student’s performance is unsatisfactory (less than a letter grade of C), he/she may not be permitted to register for subsequent classes or semesters. The student will be subject to suspension or dismissal from the program. If the student wishes to reenter the program, he/she must reapply and will be considered on the same basis as any new applicant.

Students who voluntarily withdraw from the program either passing or failing have no guarantee of reinstatement to the program. Students requesting readmission to the program should submit a letter to that effect to the Committee on Allied Health Studies for Respiratory Care.

The graduation requirements for the Respiratory Care Program include:
1. completion of all required coursework with a grade point average of 2.0 or better;
2. completion of each required respiratory care professional course with a grade of C or better;
3. successful completion of the National Board for Respiratory Care entry-level examination (CRT) or an equivalent departmental examination;
(4) successful completion of a comprehensive end-of-program competency assessment examination; and
(5) Advanced Cardiac Life Support (ACLS), Pediatric Advanced Life Support (PALS), and Neonatal Resuscitation Program (NRP) completion.

Course Descriptions

RESC 3001 Basic Respiratory Care Equipment
3.0 Semester Credit Hours
Students will have the opportunity to gain hands-on experience with basic respiratory care equipment. Students will have the opportunity to select, assemble, and check equipment for proper function, operation, and cleanliness. Equipment malfunctions and actions to correct malfunctions also will be covered. Equipment will include oxygen delivery devices, humidifiers, aerosol generators, pressure ventilators, gas delivery, metering and analyzing devices, percussors, vibrators, environmental devices, manometers and gauges and vacuum systems. Lab fee: $15.

RESC 3003 Introduction to Respiratory Care
5.0 Semester Credit Hours
This course covers the principles of chemistry and physics as they apply to respiratory care, as well as basic respiratory care procedures. Specific modes of respiratory care are examined to understand principles of application to patients, indications, hazards, contraindications, and evaluation of therapy. Modes of care include medical gases, humidity/aerosol therapy, positive pressure breathing, incentive spirometry, expiratory resistance, postural drainage, and percussion/vibration. Respiratory therapy equipment utilized in performing basic therapeutic modalities will be examined in detail.

RESC 3005 Pharmacology
4.0 Semester Credit Hours
This course introduces the physiologic and pharmacologic basis of pulmonary and cardiac medications. The course will focus on the preparation, as well as the calculation of dosages and mixtures. General principles of pharmacology as a basis for an in-depth discussion of bronchoactive drugs and drug groups related to the cardiopulmonary system such as neuromuscular blocking agents, central nervous system depressants, cardiovascular agents, and diuretics will be included.

RESC 3007 Cardiopulmonary Physiology
5.0 Semester Credit Hours
This course provides an in-depth study of cardiac and pulmonary anatomy and physiology, as well as the diagnostic procedures commonly used in the hospital to evaluate these systems. Topics include the function of the respiratory system, ventilatory mechanics, gas transport in the blood, natural and chemical regulation of breathing, circulation, blood flow and pressure, and cardiac output. The heart-lung relationship and clinical applications of these phenomena in the cardiopulmonary system will be emphasized.

RESC 3011 Patient Assessment
3.0 Semester Credit Hours
Fundamentals of respiratory assessment will be covered to include review of existing data in the patient record, patient history, physical examination, oximetry, blood gases, respiratory monitoring, pulmonary function assessment, laboratory studies, chest and upper airway radiographs, ventilation/perfusion scans, bedside EKG interpretation, cardiovascular monitoring, and nutritional assessment.

RESC 3013 Disease Management, Rehabilitation, and Extended Care
3.0 Semester Credit Hours
This course provides an overview of the concepts, procedures, and equipment utilized in the delivery of long-term care to persons with a chronic cardiopulmonary disorder. The development and implementation of disease management programs for the care of patients with asthma, COPD, and other chronic conditions is presented. Pulmonary rehabilitation, patient education, and smoking cessation programs are reviewed. Provision of health care services in the home and other non-acute settings is examined, along with technological and procedural aspects of cardiopulmonary equipment.

RESC 3015 Advanced Life Support and Airway Care
3.0 Semester Credit Hours
Basic and advanced life support will be covered to include cardiopulmonary resuscitation, artificial ventilation and circulation, endotracheal intubation, airway care, recognition and treatment of arrhythmias, and cardiovascular pharmacology. Related equipment will also be reviewed to include manual resuscitators, artificial airways, defibrillators, and cardiac monitors. Lab fee: $15.

RESC 3017 Pulmonary Disease
3.0 Semester Credit Hours
Topics include the etiology, pathophysiology, treatment and prognosis of common cardiopulmonary and pulmonary diseases and conditions. The course will include assessment skills needed to evaluate the patient’s condition from clinical observations, laboratory tests, and chest radiographs.

RESC 3019 Clinical Practice I
5.5 Semester Credit Hours
Prerequisites: RESC 3005, RESC 3003, RESC 3001
This course introduces students to clinical practice in basic respiratory care procedures. Topics include: introduction to the clinical affiliate, medical gas therapy, oxygen therapy, aerosol therapy, incentive spirometry, and patient assessment. In addition, intermittent positive pressure breathing, and chest physiotherapy and airway care using nasal, endotracheal, and tracheal tubes is introduced in basic care situations. Case presentations are required to integrate clinical and classroom theory.

RESC 3021 Mechanical Ventilation
3.0 Semester Credit Hours
This course provides instruction in the theory, setup, operation, and maintenance of mechanical ventilators and related equipment. Topics include mechanical ventilator theory, ventilator operation, ventilator maintenance, and trouble shooting. Maintenance of artificial airways, fiber-optic bronchoscopy, thoracentesis, chest tube maintenance, and arterial blood gas sampling related to the critical care patient will also be discussed. Lab fee: $15.

RESC 3023 Pulmonary Function Testing
3.0 Semester Credit Hours
This course is a study of normal and abnormal pulmonary functions. The student will have the opportunity to learn how to perform, interpret, and evaluate various pulmonary function studies. Also, students will be given the opportunity to learn the operation and maintenance of pulmonary function and gas analysis equipment. Lab fee: $10.
RESC 3025 Critical Respiratory Care
5.0 Semester Credit Hours
This course covers instruction on the phases of adult critical care and continuous mechanical ventilation. The history of mechanical ventilation, modes of mechanical ventilatory support, implementation, monitoring, ventilator weaning, and discontinuance will be covered.

RESC 3029 Clinical Practice II
3.5 Semester Credit Hours
Prerequisite: RESC 3019 Clinical Practice I
Critical respiratory care is introduced to include all tasks presented in Clinical Practice I as applied to the intensive care unit. In addition, tracheostomy care, ventilator monitoring, arterial puncture and blood gas analysis, endotracheal intubation, EKG services, and bronchoscopy observation are introduced. Case presentations are required to integrate clinical and classroom theory.

RESC 4001 Cardiopulmonary Technology
3.0 Semester Credit Hours
An overview of the various areas comprising cardiopulmonary diagnostics and related technology will be provided. Topics include sleep laboratory, stress and exercise testing, metabolic testing, ventilation/perfusion scanning, cardiac catheterization laboratory, and noninvasive cardiology. In addition, extracorporeal membrane oxygenation, mechanical circulatory assistance, hyperbaric medicine, and perfusion technology will be introduced.

RESC 4003 Pediatric and Neonatal Respiratory Care
3.0 Semester Credit Hours
The processes of growth and development relating to respiratory care, from the fetus to the adolescent, will be discussed. The study relates physiologic function to respiratory care including assessment, evaluation, and treatment. Topics include fetal growth and development, neonatal growth and development, fetal assessment, fetal evaluation, neonatal assessment, neonatal evaluation, neonatal respiratory care, neonatal pathology, pediatric pathology, and pediatric respiratory care.

RESC 4005 Advanced Critical Care Monitoring
3.0 Semester Credit Hours
This course is a study of advanced critical care techniques for invasive and noninvasive patient monitoring. Hemodynamic monitoring will include arterial pressure monitoring, central venous and pulmonary artery catheters, and cardiac output measurement. Noninvasive monitoring techniques including oximetry, transcutaneous monitoring, inductance plethysmography, capnography, and metabolic testing will be presented.

RESC 4007 Cardiopulmonary Pathology
3.0 Semester Credit Hours
This course is an overview of respiratory care management of nonrespiratory disorders commonly encountered in the critical care unit. Topics include cardiac and cardiovascular disorders, neurologic and neuromuscular disorders, shock, trauma, sepsis, near drowning, burns, smoke inhalation, carbon monoxide poisoning, drug overdose, renal failure, acute G.I. disturbances, and respiratory care of the postoperative patient.

RESC 4009 Clinical Practice III
5.5 Semester Credit Hours
Prerequisites: RESC 3029, RESC 3025, RESC 3021
Students will have an opportunity to further develop skills required in the intensive care of the respiratory patient. Topics include initiation of mechanical ventilation; patient stabilization and monitoring; measurement and evaluation of hemodynamic variables; bronchial hygiene; and evaluation for weaning, extubation, arterial line samples, and noninvasive monitoring. Case presentations are required to integrate clinical and classroom theory.

RESC 4011 Patient Care Management Seminar
3.0 Semester Credit Hours
This course is a review of respiratory care as it pertains to the national credentialing examinations administered by the National Board for Respiratory Care (NBRC). A series of simulation examinations will be used to help students prepare for these exams. Emphasis will be placed on decision making and problem solving as they relate to clinical respiratory care. Topics include Certified Respiratory Therapy Technician (CRTT) exam preparation and Registered Respiratory Therapist (RRT) exam preparation.

RESC 4013 Management
3.0 Semester Credit Hours
Prerequisite: senior status
Management principles and problems, as they relate to respiratory care; cardiopulmonary sciences; and the management of the department, hospital, service organization, and health programs will be discussed.

RESC 4015 Education in Respiratory Care
3.0 Semester Credit Hours
Prerequisite: senior status
This course is an introduction to basic principles and techniques used in respiratory care education. Topics include patient education, inservice education, course design, objectives, lesson plan development, learning activities, use of media, development of presentations, testing, and evaluation.

RESC 4017 Introduction to Research
3.0 Semester Credit Hours
This course is an introduction to the methods of scientific research to include research design and statistical analysis. Critical review of the components of research reports will be performed to include definition of the problem, review of the literature, research design, data analysis, and results.

RESC 4019 Clinical Practice IV
5.5 Semester Credit Hours
Prerequisites: RESC 3023, RESC 4003, RESC 4009
This course is an opportunity to acquire clinical experience is provided in perinatal and pediatric respiratory care in the areas of oxygen and aerosol therapy, chest physical therapy, mechanical ventilation, patient assessment and monitoring (invasive and noninvasive), airway care, and labor and delivery assistance. Also covered in the Pulmonary Function Laboratory are arterial blood gas analysis, measurement of lung volumes and capacities, flow volume loops, diffusion testing, and body plethysmography.

RESC 4021 Issues and Trends
3.0 Semester Credit Hours
Prerequisite: senior status
Current issues relevant to the cardiopulmonary sciences and respiratory care will be explored. Health care delivery systems, new trends in organization and management, new treatments and technologies, ethical issues in health care, as well as issues related to professional development and practice will be discussed.
Respiratory Care — School of Allied Health Sciences

RESC 4029  Clinical Specialization
4.5 Semester Credit Hours
Prerequisite: RESC 4019

Students will have an opportunity for in-depth application and reinforcement of adult intensive care. In addition, students are provided with the opportunity to develop an area of specialization. Specialization areas may include neonatal/pediatrics, adult critical care, pulmonary function laboratory, advanced diagnostics, pulmonary rehabilitation, home care, management, research, or education.

Estimated Program Costs
Total costs for in-state tuition and fees, parking permits, health and liability insurance, etc. are approximately $10,100. In addition, costs for other expenses, such as textbooks, course manuals, equipment, uniforms or scrubs, examination fees, and supplies, are approximately $2,800 for the entire program. Travel and living expenses for local and out-of-town clinical experiences are not included in this estimate.

Non-resident students are subject to additional tuition costs, which may be found under “Financial Information” in this Catalog.

Proposed Advanced Certificate and Master of Science Degree Programs
The Department of Respiratory Care has requested approval to offer a post-baccalaureate Advanced Certificate in Respiratory Care and a Master of Science degree in Respiratory Care.

The goals of the post-baccalaureate certificate program are to: prepare advanced level respiratory therapists for clinical practice; provide leadership training in the areas of management, supervision, education and research; and develop clinical specialists in the areas of adult critical care, pediatric critical care, neonatal critical care, pulmonary function technology and cardiopulmonary diagnostics, polysomnography, and other clinical areas, as needed.

The goals of the Master of Science degree program are to: prepare future faculty for college and university-based respiratory care educational programs; develop researchers who can formulate appropriate questions, organize and test hypotheses, and apply research results to the practice of respiratory care; prepare clinical practitioners with advanced knowledge and skills in basic and clinical sciences; and prepare leaders who are able to plan, develop, and deliver high quality, cost-effective health care services.

If approved, these two new programs may be offered beginning in 2004.
School of Nursing

Mission
The University of Texas School of Nursing at San Antonio was authorized by the Texas legislature in 1969 for the purpose of “preparing nurses to meet the needs of hospitalized patients in the state of Texas.” The School of Nursing, now a part of The University of Texas Health Science Center at San Antonio, has expanded its mission to include providing quality baccalaureate and graduate nursing programs to qualified students, supporting competent clinical nursing practice, participating in scholarly activity, and engaging in community service. The mission reflects the commitment of the faculty to the people of the state of Texas to accomplish its goals and purposes.

Programs
Three programs of instruction in nursing are offered at The University of Texas Health Science Center at San Antonio. The undergraduate program and a continuing education program are presented by the School of Nursing; the graduate program is administratively directed by the Graduate School of Biomedical Sciences. The undergraduate program includes planned learning opportunities designed to meet the needs of beginning as well as registered-nurse students. The graduate program is designed to provide opportunities for advanced clinical study, research, and preparation for teaching or administration. Both undergraduate and graduate programs are offered on a full-time or part-time basis. The continuing education program provides learning opportunities for the ongoing educational needs of registered nurses in South Texas.

Philosophy
The University of Texas Health Science Center at San Antonio School of Nursing is one of five schools of the Health Science Center and shares the goal of assuring high quality health care for the people of Texas. The purpose of the School of Nursing is to prepare students at the undergraduate and graduate levels to function in a variety of professional nurse roles. The School of Nursing is committed to the highest standards of achievement in instruction, student performance, research and scholarly accomplishment, patient care, and service, as well as the Health Science Center’s responsibilities to South Texas, the state, the nation, and the world.

Major philosophical commitments of the School of Nursing are organized according to six concepts that are emphasized throughout its organization, characterize the conduct of faculty and students, and inspire its education programs. The concepts are: professionalism, scholarship, integrated learning, transition, customization, and partnership.

Professionalism
Nursing is a theory-driven, scientifically based profession that is actualized through the art of practice. The process of care, which occurs through partnership between the practitioner and the patient, enables nurses to nurture human potential, enhance quality of life, and assist patients to achieve optimal health. Nursing draws its knowledge bases and theory from nursing, basic, behavioral, and biological sciences. The professional nurse, in the roles of provider, leader/manager, and member/advocate of the profession is responsible for and accountable to individuals, families, aggregates, the community and society for assessing, planning, providing, and evaluating nursing care across the life span. Faculty and preceptors, as role models for students, personify the qualities of professionalism.

Scholarship
Nursing scholarship is a unique synthesis of knowledge from basic, behavioral, and biological sciences within the domain that is professional nursing. Nursing scholarship involves discovering, creating, structuring, testing, and refining knowledge needed for the practice of nursing. This process occurs through various partnerships among individuals, the School of Nursing, the Health Science Center, and local and world communities. The value of professional scholarship, to which faculty and students subscribe, is realized through its application in the role of provider, leader/manager and member/advocate of the profession, in response to specific human and societal needs.

Integrated Learning
Learning is a process that involves the totality of human experiences and facilitates lifelong transitions. Integrated learning has two unique dimensions. The first dimension acknowledges the interaction of the student’s personal components of need, ability, and style. The second acknowledges that the subject (nursing) necessitates incorporation of diverse information into a unified whole-knowledge. Active learning requires students who demonstrate commitment to their development and assume responsibility for their role in the learning process. This results in the preparation of professional practitioners with a broad perspective and understanding of multiple content areas, who are able to synthesize information from various disciplines, think logically, analyze critically, and communicate effectively with patients and other health care professionals. Settings that will optimize student learning are critical to efficient and effective teaching and learning.
Transition
“A transition denotes a change in health status, in role
relations, in expectations, or in abilities.” (Meleis, 1991)
Many factors influence resilient and healthy transitions
resulting in positive changes in bio-behavioral responses,
relationships, capabilities, and outcomes relative to people,
organizations, and society. The nurse as provider engages
the patient in a partnership to evaluate, nurture, and
sustain a healthy state. During times of health transitions
due to developmental processes, disability, disease, or the
process of dying, the nurse provider cares for the patient
in a holistic, compassionate, and ethical manner. The
nurse-patient partnership involves customized care to the
individual patient. The outcomes of the nurse-patient
partnership are manifested in changes in health status,
knowledge level, nature of role relationships, behavioral
changes, and attitudes.

Of particular importance in the educational area, is the
School of Nursing’s commitment to serving a diverse
student population, and providing education mobility.
The faculty recognizes that various nursing programs share
a common core and value the various life experiences,
knowledge, skill, and abilities that students bring to the
educational process. The School of Nursing fosters educa-
tional transitions by providing the prospective student
with multiple entry options to minimize repetition of
content between programs. Faculty and students in part-
nership customize learning experiences to assist the student
in transition to the role of professional nurse at the under-
grade level and the roles of advanced practice nurse and
scientist at the graduate levels. Faculty and students share
the responsibility for an educational partnership that en-
courages growth toward learning outcomes in an innova-
tive, evolving learning environment. Outcomes are
found in the cognitive, affective, and psychomotor do-
 mains and encourage growth from novice to expert levels.

Customization
Nursing care and education should be realized in a man-
ner that maximizes resource utilization, quality, and access.
Customization implies designing processes responsive to
participant needs, understanding that ability to respond
to change is critical to full participation of individuals and
groups in the global future. Customization requires adapt-
ability, an unbounded frame of reference, reconceptualizing
ideas, realignment, cooperation, and focus on essentials.
For the learner, needs, readiness and style are considered,
as is curriculum design and implementation that allows
for adaptability to best facilitate educational and profes-
sional transitions. Customization in care management and
delivery involves interactions between health care provid-
ers from many disciplines within their collective contexts
and requires active partnerships.

Partnership
Responsive to the changing health care environment,
participants maintain a set of dynamic relationships with
mutual responsibility for student education and the health
of all partners. Faculty and students share the responsi-
bility for an educational partnership that encourages
growth toward learning outcomes in an innovative, evolv-
ing learning environment. Partnership implies a
collegiality that facilitates implementing a learning envi-
ronment where each participant contributes and receives
something that matters, becomes more capable person-
ally and in groups, and devises coordinated meaningful
activity. Partners are responsible according to their role:
teacher, student, patient*, health care provider, organi-
zation, family, community. Partnerships extend to
multidisciplinary relationships and organizational con-
tracts. The partnership generates strategic plans and
positive creative energy to support the health care goals
of the whole.

Accreditation
The University of Texas Health Science Center at San
Antonio School of Nursing’s baccalaureate program is
accredited by the Board of Nurse Examiners for the state
of Texas, P.O. Box 430, Austin, Texas 78767-0430, (512)
305-6818. The Bachelor of Science in Nursing degree
program and the Master of Science in Nursing degree
program have received full accreditation through 2011
from the:
  Commission on Collegiate Nursing Education
  One Dupont Circle NW, Suite 530
  Washington, D.C.  20036-1120
  (202) 887-6791

*patient (individual, family, aggregate, community, or society)
Description of baccalaureate prepared nurse

The baccalaureate prepared professional nurse provides comprehensive care across the lifespan in diverse settings following a Community-Partnership model. The nurse is skilled in case and system management, as well as intra/interdisciplinary coordination of individual and population-based health care. The professional nurse is accountable for high-quality, cost-effective, accessible care in implementing and integrating primary, acute, and tertiary care for patients* as they move across settings. The professional nurse maintains a global view of health, health policy, health care, and health services. As a scholar, the nurse is capable of making valuable contributions to an understanding of health, illness, and healing.

Program objectives:

The baccalaureate program provides opportunities for the learner to develop the following behaviors:

1. Design nursing processes to provide comprehensive care across the lifespan in structured-unstructured settings, simple-complex situations, and predictable-unpredictable circumstances.
2. Create partnerships with patients* in the customized therapeutic care process to protect, promote, and restore optimal health.
3. Incorporate therapeutic communication skills when enacting professional practice.
4. Evaluate practice decisions using critical thinking.
5. Evaluate strategies to improve nursing care through scholarship.
6. Manage, lead, and collaborate with health care providers from multiple disciplines to deliver quality care across levels of prevention and within organizational structures of diverse health care settings.
7. Account for ethical and legal conduct under the standards of nursing practice.
8. Analyze issues and trends in health care that affect the health care environment, locally and globally.
9. Adhere to ethical and legal conduct that reflects the standards of nursing practice.
10. Display behaviors that demonstrate the values of a self-directed professional engaged in continuing development.

Admission and Application

Requirements for admission to the undergraduate program are detailed in the Applicant Viewbook of the School of Nursing, available in print and on the Web (http://studentservices.uthscsa.edu/publications/nursing.html). Prospective students must have completed 60 hours of prescribed lower-division coursework at any regionally accredited college or university prior to enrollment. Admission is competitive. Official application forms and procedures for applicants also can be found in the Viewbook. Applicants must undergo criminal background checks.

Special (Non-Degree) Students

Special Student status may be granted to an individual who wishes to enroll in a course(s) presented by the School of Nursing without entering a degree program. Those who are eligible for Special Student Admission include: (a) a graduate of a baccalaureate program in nursing or (b) a student currently enrolled and in good standing in a baccalaureate nursing program at another institution.

Special Students will be allowed to take a maximum of twelve semester hours of courses. It is the student’s responsibility to determine if the course is transferable to her or his school. Credit for these courses toward a Bachelor of Science in Nursing degree from UTHSCSA will be considered only if the student is subsequently admitted to the program.

Currently enrolled students have priority for courses. Special Students are admitted on a first-come, first-served basis for spaces remaining in a course. Final decisions on admission will be made by the Committee on Admission, Progression and Graduation for the Undergraduate Program.

Transfer Students

Individuals who wish to transfer into the BSN program of the School of Nursing must have completed the 60 hours of prenursing coursework required by this institution and accumulated a minimum grade point average of 2.3 in required courses and an overall grade point average of 2.0. Applicants must also be in good standing and eligible for readmission at their current/former school of nursing. At least 30 of the final 33 hours of work in the nursing major must be completed at UTHSCSA School of Nursing. Application deadlines are April 20 (fall) and December 1 (spring). The GPA of transfer students must be competitive for the current incoming class.

Students transferring from private or out-of-state colleges who have not been required to meet TASP requirements must take and pass the TASP test prior to the accumulation of 9 or more credit hours at the UTHSCSA School of Nursing. (See “Academic Policies.”)

Information and procedures for applying as a Special Student or a Transfer Student may be obtained by contacting:

UTHSCSA
Office of Student Services
Mail Code 7702
Nursing Admissions
7703 Floyd Curl Drive
San Antonio, Texas 78229-3900
210-567-2670

*patient (individual, family, aggregate, community, or society)
Registration
Entering students must register and pay tuition and fees on the date of official registration listed in the Academic Calendar in order to hold their place in the class. Continuing students will not be registered after the fourth day of a regular session without the permission of the Dean. Registration for summer session(s) is during a registration period in the spring.

Curriculum
The undergraduate nursing curriculum is completed in two phases, the first of which is the 60 semester hours of basic liberal arts required for admission to the School of Nursing (Prenursing Course Requirements).

The second phase encompasses the major in nursing and is presented in the junior and senior years. The curriculum includes 51 semester hours of required nursing courses and 9 semester hours of electives. Three of the 9 semester hours must be in nursing while the remaining 6 semester hours may be in nursing or any other upper-level subjects that are approved by the School of Nursing and awarded by an accredited four-year institution of higher education. (These 9 hours may be taken on a pass/fail basis.)

Students may complete the 51 hours of required nursing courses through the Generic Process or the Flexible Process. Successful completion of either pattern and the 9 hours of electives results in the awarding of the Bachelor of Science in Nursing degree. Both the Generic Process and Flexible Process can be taken either full-time or part-time. The two curricular patterns are described on the following pages.*

Time Limit
Undergraduate students must successfully complete all coursework toward the degree within four years of the date of initial enrollment in the program.

The Semester Credit Hour
The unit measure for credit purposes is the semester credit hour. One semester credit hour of credit is given for each one hour of class or three hours of laboratory/clinical computer lab experience per week per semester, with the exception of the summer session during which the class and clinical hours are concentrated but provide equivalent course time.

Course Numbers
NURS designates all required nursing courses given in the School of Nursing. NURE designates nursing electives. A four-digit number follows: the first digit indicates the earliest semester at which a course may be taken or at which a course is usually taken; the second digit indicates the semester hours credit given for the course; the last two digits are the course identification number.

Distance Technologies
Faculty in the School of Nursing employ a variety of strategies to conduct courses including interactive television (two-way audio and video) and computer technology which may be used for a portion or all of a course as a long-distance learning strategy.

Learning Lab Participation
Active participation in learning laboratories is required of all students. Such activities include performing procedures (physical exam techniques, bed baths, range of motion exercises, etc.) preparing students for professional clinical practice.

The Generic Process
This curricular pattern is designed for the majority of the student body who enter the School of Nursing without prior nursing knowledge or skills. Completion of the program usually requires four semesters of full-time study.** Part-time enrollment in the program is an option.

Program Plan (Full-time Study)*

<table>
<thead>
<tr>
<th>Semester I</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS 3209</td>
<td>Introduction to Professional Nursing</td>
</tr>
<tr>
<td>NURS 3312</td>
<td>Strategies for Professional Nursing: Pharmacotherapeutics</td>
</tr>
<tr>
<td>NURS 3802</td>
<td>Strategies for Professional Nursing: The Nature of Health Transitions</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Semester II</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS 3203</td>
<td>Strategies for Professional Nursing: Research</td>
</tr>
<tr>
<td>NURS 3520</td>
<td>Strategies for Professional Nursing: Mental Health Transitions</td>
</tr>
<tr>
<td>NURS 3610</td>
<td>Strategies for Professional Nursing: Chronic Health Transitions</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Semester III</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS 4425</td>
<td>Strategies for Professional Nursing: Childbearing Families</td>
</tr>
<tr>
<td>NURS 4435</td>
<td>Strategies for Professional Nursing: Childrearing Families</td>
</tr>
<tr>
<td>NURS 4410</td>
<td>The Nurse as Professional: Leader-Manager</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Semester IV</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS 4203</td>
<td>The Nurse as a Professional</td>
</tr>
<tr>
<td>NURS 4614</td>
<td>Strategies for Professional Nursing: Major Health Transitions</td>
</tr>
<tr>
<td>NURS 4514</td>
<td>Strategies for Professional Nursing: Community as Partner</td>
</tr>
<tr>
<td>Upper-division Electives</td>
<td>9.0</td>
</tr>
<tr>
<td>(3 semester hours must be in nursing)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>60.0</td>
</tr>
</tbody>
</table>

*Curriculum subject to revision and approval by the Board of Nursing Examiners for the state of Texas

**Required courses are scheduled to be offered each fall and spring
Required Courses

NURS 3209  Introduction to Professional Nursing  
2.0 Semester Credit Hours  
Prerequisite: Admission to the program  
This course provides an introduction to professional nursing and the role of the nurse in customizing the promotion and maintenance of health. Course content includes the nature and history of professionalism and processes underlying professional nursing, basic concepts of health and illness transitions, and legal considerations in nursing practice.

NURS 3312  Strategies for Professional Nursing: Pharmacotherapeutics (3 Cr Theory)  
3.0 Semester Credit Hours  
Prerequisites or concurrent: Generic Process: NURS 3209; Flexible Process: admission to the program  
This course introduces basic concepts of pharmacotherapy and the scientific basis of pharmacotherapeutics with legal/ethical guidelines for the nursing profession. The role of drug therapy in health promotion and in the prevention and treatment of specific health transitions will be emphasized. In addition, the customization of drug therapy and the partnership role of the professional nurse in drug therapy will be introduced.

NURS 3802  Strategies for Professional Nursing: The Nature of Health Transitions  
(4 Cr Theory, 4 Cr Clinical)  
8.0 Semester Credit Hours  
Prerequisites or concurrent: NURS 3209, NURS 3312  
This course provides an introduction to professional nursing care of adults with transitions in health status requiring basic nursing care. The effects of health transitions and the process of adaptation of individuals and their significant others are analyzed through integrated learning experiences. A clinical practicum based upon health assessment principles provides an opportunity to plan, implement, and evaluate customized care in partnership with individuals and their significant others in a variety of environments. Health assessment addresses multiple methods and tools including physical assessment principles and skills. Emphasis is on planning and providing appropriate nursing interventions and basic psychomotor nursing skills based on understanding the nature of health transitions and their effects on the individuals. The process and application of critical thinking is designed to promote beginning scholarship.

NURS 3203  Strategies for Professional Nursing: Research  
(2 Cr Theory)  
2.0 Semester Credit Hours  
Prerequisites: completion of first semester Generic Process/Flexible Process  
The role of research in the conduct of professional nursing is examined. Classroom discussions and learning experiences focus on the value of research-based knowledge as a means to promote quality patient care. The research process provides content for evaluating quality and/or usefulness of research utilization/evidence based practice in development of nursing intervention strategies.

NURS 3520  Strategies for Professional Nursing: Mental Health Transitions  
(2 Cr Theory, 3 Cr Clinical)  
1.0 Semester Credit Hour  
Prerequisite: Completion of first semester Generic Process  
This course focuses on the therapeutic use of self in the care of patients experiencing mental health transitions. Mental health transitions and therapeutic modalities are analyzed and integrated to customize care. A clinical practicum provides an opportunity to implement therapeutic relationships and customize nursing process with individuals and families experiencing mental health transitions. Culturally sensitive assessment and intervention strategies with diverse patients are addressed.

NURS 3610  Strategies for Professional Nursing: Chronic Health Transitions  
(3 Cr Theory, 3 Cr Clinical)  
6.0 Semester Credit Hours  
Prerequisites: completion of first semester, completion of or concurrent enrollment in NURS 3520  
This course focuses on patients who are experiencing transitions in health status due to chronic illness. The effects of chronic health problems with individuals and their significant others are analyzed through integrated learning experiences. A clinical practicum provides an opportunity to demonstrate professional nursing and to apply the nursing process in a customized plan of care, developed in partnership with individuals and their significant others, to manage chronic illness. Scholarship will be developed through critical thinking and applications of theoretical concepts to clinical practice and scholarly writing.

NURS 4425  Strategies for Professional Nursing: Childbearing Families  
(2 Cr Theory, 2 Cr Clinical)  
4.0 Semester Credit Hours  
Prerequisites: completion of first and second semesters; must be completed before enrollment in Nurse as a Professional: Leader-Manager  
This course focuses on the application of theories to the nursing care of childbearing families in transition. Emphasis is on the nurse’s partnership role with childbearing families and other health care professionals in the provision of care. In addition, the course examines issues related to women’s health during the childbearing years. Ethical and legal issues relating to reproduction and to newborn nursing practice are explored.

NURS 4435  Strategies for Professional Nursing: Childbearing Families  
(2 Cr Theory, 2 Cr Clinical)  
4.0 Semester Credit Hours  
Prerequisites: completion of first, second, and third semesters Generic Process; must be completed before enrollment in Nurse as a Professional: Leader-Manager  
This course focuses on the application of theories to the nursing care of children and their families in transition. Emphasis is on the nurse’s partnership role with children and their families and with other health care professionals in the provision of care. Ethical and legal issues relating to the nursing care of childbearing families are examined.

NURS 4410  The Nurse as Professional: Leader-Manager  
(Flex-LVN S Only)  
(2 Cr Theory, 2 Cr Clinical)  
4.0 Semester Credit Hours  
Prerequisites: completion of first and second semesters Generic Process, NURS 4425, NURS 4435; Flexible Process: concurrent or prerequisite, NURS 4512  
This course focuses on the role of the professional nurse as a leader and as a manager in the collaborative design and delivery of customized health care for patients. Traditional management theories and practices are explored, including the organization, planning, staffing, directing and controlling of various resources in diverse health care systems. A strong emphasis is placed on the develop-
ment of transformational leadership. The clinical practicum provides the student with the opportunity to partner with leaders and managers to explore and influence health care delivery system issues that impact quality of care.

NURS 4203 The Nurse as a Professional (2 Cr Theory)

2.0 Semester Credit Hours
Prerequisites: completion of first, second, and third semesters in Generic Process; completion of first and second semesters in Flexible Process

This course focuses on the nursing profession and its professional organizations. Ethical and professional issues and corresponding laws affecting the individual, the practice of professional nursing, and the nursing profession are explored. Laws that govern the role of the professional nurse are applied. Concepts of autonomy, accountability, and advocacy are integrated throughout the course.

NURS 4514 Strategies for Professional Nursing: Community as Partner (2 Cr Theory, 3 Cr Clinical)

5.0 Semester Credit Hours
Prerequisites: Generic Process: completion of first, second, and third semesters, NURS 4203, 4614 or concurrent; Flexible Process: concurrent or prerequisite, NURS 4310

This course focuses on the roles of nursing in establishing partnerships with communities in customizing therapeutic care in order to protect, promote, and restore optimal community health. The clinical practicum provides students with opportunities to deliver quality community health care across all levels of prevention and to explore the planning and implementation of customized community health programs. Students collaborate with agencies/institutions and health care delivery systems as leader/manager partners in community health.

NURS 4614 Strategies for Professional Nursing: Major Health Transitions (3 Cr Theory, 3 Cr Clinical)

6.0 Semester Credit Hours
Prerequisites: completion of first, second, and third semesters Generic Process, NURS 4203 or concurrent

This course focuses on nursing care of individuals across the lifespan who are experiencing transitions in health requiring complex nursing judgment and interventions. The clinical practicum provides an opportunity to integrate learning within varied environments, including acute-care settings and non-institutional settings in partnership with patients and other professionals.

The Flexible Process

The Flexible Process is an alternative approach within the undergraduate program to acquiring the Bachelor of Science in Nursing degree (BSN). This track is restricted to Licensed Vocational Nurses, with at least one year of nursing experience, and Registered Nurses. The content of the Flexible Process is the same as that of the Generic Process, but the material has been reorganized to facilitate concentrated study. The student enrolled for full-time study will find it difficult to maintain full-time employment. LVNs will receive 18 semester hours Nursing course credit and RNs will receive 30 semester hours Nursing course credit.

Through the Flexible Process, the student has the option of taking coursework and/or acquiring credit through challenge examinations.

If the student is unsuccessful in a challenge examination, he or she may take the course(s) in residence. Should a student withdraw after failing a challenge examination, the student is not eligible for a refund since completion of the challenge examination is considered to be completion of a course. If the student successfully challenges all courses, he or she is awarded credit and is considered to have completed the 51 hours (54 hours for RN students) of required nursing courses. Challenge exams are not offered for the four Semester I LVN courses or the electives which are part of the 60-hour requirement for the BSN degree.

The following are program plans for LVNs and RNs. Part-time enrollment in the program is an option. All work toward the degree must be completed within four years of the date of initial enrollment in the program.

Program Plans (Full-time Study)

LVN

<table>
<thead>
<tr>
<th>Semester</th>
<th>Hours</th>
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<tbody>
<tr>
<td>I (junior year)</td>
<td></td>
</tr>
<tr>
<td>NURS 3312 Strategies for Professional Nursing: Pharmacotherapeutics</td>
<td>3.0</td>
</tr>
<tr>
<td>NURS 3313 Strategies for Professional Nursing: Clinical Skills</td>
<td>3.0</td>
</tr>
<tr>
<td>NURS 3220 Strategies for Professional Nursing: Mental Health Transitions</td>
<td>2.0</td>
</tr>
<tr>
<td>NURS 3409 Strategies for Professional Nursing: Transition to Prof. Nursing Practice</td>
<td>4.0</td>
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</table>

<table>
<thead>
<tr>
<th>Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>II (senior year)</td>
<td></td>
</tr>
<tr>
<td>NURS 4212 Strategies for Professional Nursing: Health Assessment</td>
<td>2.0</td>
</tr>
<tr>
<td>NURS 4214 The Nurse as Professional: Research</td>
<td>2.0</td>
</tr>
<tr>
<td>NURS 4512 Strategies for Professional Nursing: Health Promotion</td>
<td>5.0</td>
</tr>
<tr>
<td>NURS 4410 The Nurse as Professional: Leader-Manager</td>
<td>4.0</td>
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<tr>
<th>Semester</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>III (senior year)</td>
<td></td>
</tr>
<tr>
<td>NURS 4203 The Nurse as Professional</td>
<td>2.0</td>
</tr>
<tr>
<td>NURS 4310 Strategies for Professional Nursing: The Family Across the Lifespan</td>
<td>3.0</td>
</tr>
<tr>
<td>NURS 4514 Strategies for Professional Nursing: Community as Partner</td>
<td>5.0</td>
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</tbody>
</table>

RN

<table>
<thead>
<tr>
<th>Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>I (senior year)</td>
<td></td>
</tr>
<tr>
<td>NURS 4212 Strategies for Professional Nursing: Health Assessment</td>
<td>5.0</td>
</tr>
<tr>
<td>NURS 4214 The Nurse as Professional: Research</td>
<td>4.0</td>
</tr>
<tr>
<td>NURS 4512 Strategies for Professional Nursing: Health Promotion</td>
<td>5.0</td>
</tr>
<tr>
<td>NURS 4312 The Nurse as Professional: Leadership</td>
<td>4.0</td>
</tr>
</tbody>
</table>
Semester II (senior year)

NURS 4203 The Nurse as Professional  2.0  
NURS 4310 Strategies for Professional Nursing: The Family Across the Lifespan  3.0  
NURS 4514 Strategies for Professional Nursing: Community as Partner  5.0  

NOTE: 3 credits nursing elective and 6 credits non-nursing electives are also required for graduation. Students have the option of taking these fall, spring, or summer semester(s).

Required Courses

The first four courses for LVNs in the Flexible Process are NURS 3312, 3313, 3220, and 3409. First-semester courses are prerequisite to further progression in the program for LVNs. The curriculum is subject to revision and approval by the Board of Nursing Examiners for the state of Texas.

NURS 3220 Strategies for Professional Nursing: Mental Health Transitions  (1 Cr Theory, 1 Cr Clinical)  
2.0 Semester Credit Hours  
Prerequisite or concurrent: NURS 3312  
This course focuses on the therapeutic use of self in the care of patients experiencing psychiatric-mental health transitions. Psychiatric and mental health transitions and therapeutic modalities are analyzed and integrated to customize care. A clinical practicum provides an opportunity to implement therapeutic relationships and customize nursing process with individuals and families experiencing mental health transitions. Culturally sensitive assessment and intervention strategies with diverse patients are addressed.

NURS 3312 Strategies for Professional Nursing: Pharmacotherapeutics (3 Cr Theory)  
3.0 Semester Credit Hours  
Prerequisites or concurrent: Generic Process: NURS 3209; Flexible Process: admission to the program  
This course introduces basic concepts of pharmacotherapy and the scientific basis of pharmacotherapeutics with legal/ethical guidelines for the nursing profession. The role of drug therapy in health promotion and in the prevention and treatment of specific health transitions will be emphasized. In addition, the customization of drug therapy and the partnership role of the professional nurse in drug therapy will be introduced.

NURS 3313 Strategies for Professional Nursing: Clinical Skills (1 Cr Theory, 2 Cr Clinical)  
3.0 Semester Credit Hours  
Prerequisite: admission to the program  
This course focuses on clinical nursing skills commonly employed by professional nurses in the provision of competent nursing care to patients experiencing transitions in health status. Emphasis is on the theoretical basis for the skills, correct psychomotor techniques, and customization of these skills in various simulated patient situations. Students are expected to integrate knowledge from the basic physical and psychosocial sciences into the acquisition of new skills. Learning experiences include content presentation/discussions, independent study with various modalities, and supervised laboratory practice.

NURS 3409 Strategies for Professional Nursing: Transition to Professional Nursing Practice  (2 Cr Theory, 2 Cr Clinical)  
4.0 Semester Credit Hours  
Prerequisites or concurrent: NURS 3220, NURS 3312, NURS 3313  
This course focuses on assuming the professional nursing role and its application in practice. Emphasis is on the care of the individuals and families requiring different levels of nursing interventions. This is accomplished in partnership with other health care professionals in various structured settings. Students will be provided the opportunity to develop scholarly inquiry as they integrate professional nursing concepts with previous learning and experience.

NURS 4212 Professional Nursing: Health Assessment  
2.0 Semester Credit Hours  
Prerequisite: NURS 3624  
This course focuses on the theory and skills of health assessment, including health history and physical examination of infants and adults. Students apply selected principles and skills in a simulated practice setting. Clock hours: one and one-half class hours and 2 1/2 lab hours per week. Lab fee: $30. Exam fee: $30.

NURS 4214 Strategies for Professional Nursing: Research  (2 Cr Theory)  
2.0 Semester Credit Hours  
Prerequisites: completion of first semester courses Generic Process/Flexible Process  
The role of research in the conduct of professional nursing is examined. Classroom discussions and learning experiences focus on the value of research-based knowledge as a means to promote quality patient care. The research process provides content for evaluating quality and/or usefulness of research utilization/evidence-based practice in the development of nursing intervention strategies.

NURS 4310 Strategies for Professional Nursing: The Family Across the Lifespan  (2 Cr Theory, 1 Cr Clinical)  
3.0 Semester Credit Hours  
Prerequisites: NURS 4312, NURS 4410  
This course focuses on the family as a basic unit of society and promotion of family health across the lifespan in partnership with the nurse. Opportunity is provided to apply nursing theory and family assessment data to customize a plan of care using the nursing process in the family’s primary setting. Topics include variables affecting families, family assessment, adaptive problems, anticipatory guidance, teaching, family development theory, sexuality, and aging.

NURS 4312 The Nurse as Professional: Leadership (RNs only)  (1 Cr Theory, 2 Cr Clinical)  
3.0 Semester Credit Hours  
Prerequisites or concurrent: NURS 4212, NURS 4512  
This course focuses on the role of the professional nurse as a leader and as a manager in the collaborative design and delivery of customized health care for patients. Traditional management theories and practices are built upon, including the organization, planning, staffing, directing, and controlling of various resources in diverse health care systems. A strong emphasis is placed on the development of transformational leadership. The clinical practicum provides the student with the opportunity to partner with leaders and managers to explore and influence health care delivery system
issues that effect quality of care. (This course builds on the management theory and experience RN Flex students have had in their ADN and Diploma Programs).

NURS 4410  The Nurse as Professional: Leader-Manager  
(Flex-LVN Only)  
(2 Cr Theory, 2 Cr Clinical)  
4.0 Semester Credit Hours  
Prerequisites: completion of first and second semesters Generic Process, NURS 4425, NURS 4435; Flexible Process: concurrent or prerequisite, NURS 45(tba)  
This course focuses on the role of the professional nurse as a leader and as a manager in the collaborative design and delivery of customized health care for patients. Traditional management theories and practices are explored, including the organization, planning, staffing, directing and controlling of various resources in diverse health care systems. A strong emphasis is placed on the development of transformational leadership. The clinical practicum provides the student with the opportunity to partner with leaders and managers to explore and influence health care delivery system issues that effect quality of care.

NURS 4425  Strategies for Professional Nursing:  
Childbearing Families  
(2 Cr Theory, 2 Cr Clinical)  
4.0 Semester Credit Hours  
Prerequisites: completion of first and second semesters; must be completed before enrollment in Nurse as a Professional/Leader-Manager  
This course focuses on the application of theories to the nursing care of childbearing families in transition. Emphasis is on the nurse’s partnership role with childbearing families and other health care professionals in the provision of care. In addition, the course examines issues related to women’s health during the childbearing years. Ethical and legal issues relating to reproduction and to newborn nursing practice are explored.

NURS 4435  Strategies for Professional Nursing:  
Childrearing Families  
(2 Cr Theory, 2 Cr Clinical)  
4.0 Semester Credit Hours  
Prerequisites: completion of first, second, and third semesters Generic Process; must be completed before enrollment in Nurse as a Professional/Leader-Manager  
This course focuses on the application of theories to the nursing care of children and their families in transition. Emphasis is on the nurse’s partnership role with children and their families and with other health care professionals in the provision of care. Ethical and legal issues relating to the nursing care of childrearing families are examined.

NURS 4512  Strategies for Professional Nursing:  
Health Promotion  
5.0 Semester Credit Hours  
Prerequisites: NURS 3312, 3220, 3409; NURS 4212/or concurrently  
This course is the study of factors contributing to the health of an individual and the role of the nurse in assessing and meeting needs of the individual. Concepts include wellness, stress, patienthood, groups, crisis, communication, nursing process, teaching/learning, and professionalism. The clinical practicum provides an opportunity for students to care for individuals experiencing health disturbances and to assist them in establishing and/or maintaining healthy living patterns. Clock hours: three class hours; eight practicum hours per week. Exam fee: $15.

NURS 4514  Strategies for Professional Nursing:  
Community as Partner  
(2 Cr Theory, 3 Cr Clinical)  
5.0 Semester Credit Hours  
Prerequisites: Generic Process: completion of first, second, and third semesters, NURS 4614; Flexible Process: concurrent or prerequisite, NURS 4310  
This course focuses on the roles of nursing in establishing partnerships with communities in customizing therapeutic care in order to protect, promote, and restore optimal community health. The clinical practicum provides students with opportunities to deliver quality community health care across all levels of prevention and to explore the planning and implementation of customized community health programs. Students collaborate with agencies/institutions and health care delivery systems as leader/manager partners in community health.

NURS 4614  Strategies for Professional Nursing: Major  
Health Transitions  
(3 Cr Theory, 3 Cr Clinical)  
6.0 Semester Credit Hours  
Prerequisites: Completion of first, second, and third semesters Generic Process  
This course focuses on nursing care of individuals across the life span who are experiencing transitions in health requiring complex nursing judgment and interventions. The clinical practicum provides an opportunity to integrate learning within varied environments, including acute-care settings and non-institutional settings in partnership with patients and other professionals.

Credit by Examination  
Credit by examination is validation of the candidate’s competencies and the awarding of credit based upon satisfactory achievement of objectives in the program by examination. The candidate is then allowed to matriculate the courses appropriate for the demonstrated level of achievement. Credit by examination is offered for selected required courses in the Flexible Process. (Courses in the Generic Process and nursing electives cannot be completed through challenge examinations.) In the Flexible Process it is possible to acquire most of the required nursing courses through credit by examination.

LVN students who have been admitted to the Flexible Process and who have earned credit for the first four courses, and RN students may choose to challenge the other seven courses in the Flexible Process sequence for credit by examination. They will have access to all materials in the campus learning center and may obtain course syllabi on the School of Nursing Web site (http://nursing.uthscsa.edu). Students attempting credit by examination will not, however, receive tutoring by the School of Nursing faculty in preparation for a challenge examination.

New RN students and ongoing (second and third semester) students attempting credit by examination must register early. Portions of the examinations for credit are scheduled before the official registration date. Early registration is held approximately four weeks prior to the official registration date each semester.
Students may not take an examination for credit if they have completed the course(s) with either a passing or failing grade or if they have withdrawn from the course(s). Credit will be granted for a grade of C or higher on a challenge examination. Credit earned by examination will be recorded as the actual letter grade achieved and will be used in computing the cumulative GPA.

Students who are unsuccessful in attempting CBE must continue in the course that semester or receive an Incomplete. The course must be taken the next semester that the course is offered.

**Electives**

Nine hours of electives (3 hours for RNs in Flexible Process) are required to complete the program. At least three (3) of the nine hours must be credit for a nursing elective.

Although electives are available each semester and summer session, offerings vary depending upon expressed student interest and faculty availability.

Elective offerings will be published each semester/session.

Electives may be taken on a pass/fail basis. Challenge examinations are not offered for electives.

**NURE 3010** Mentored Research Practicum: Health Transitions (1–2 Cr Clinical)

*1.0–2.0 Variable Semester Credit Hours*

Prerequisites: receipt of a research scholar award, file completed, signed contract in student’s Undergraduate/Graduate Nursing Office File

This course is a practicum course taken each semester the student is designated as a Research Scholar. Designation as a Research Scholar is linked to specific undergraduate/graduate student awards. The student must be concurrently enrolled in NURE 3115 Applications of Research in Nursing: Mentored Research Scholars. During this practicum course the student actively participates in selected aspects of a research project with a faculty mentor.

**NURE 3011** Mentored Research Practicum: Chronic Health Transitions (1–2 Cr Clinical)

*1.0–2.0 Variable Semester Credit Hours*

Prerequisites: concurrent enrollment in NURE 3115, receipt of a research scholar award, file completed, signed contract in student’s Undergraduate/Graduate Nursing Office File

This course is a practicum course taken each semester the student is designated as a Research Scholar. Designation as a Research Scholar is linked to specific undergraduate/graduate student awards. During this practicum course, the student actively participates in selected aspects of a research project with a faculty mentor.

**NURE 3012** Mentored Research Practicum: Health and Illness (1–2 Cr Clinical)

*1.0–2.0 Variable Semester Credit Hours*

Prerequisites: concurrent enrollment in NURE 3115, receipt of a research scholar award, file completed, signed contract in student’s Undergraduate/Graduate Nursing Office File

This course is a practicum course taken each semester the student is designated as a Research Scholar. Designation as a Research Scholar is linked to specific undergraduate/graduate student awards. During this practicum course, the student actively participates in selected aspects of a research project with a faculty mentor.

**NURE 3013** Mentored Research Practicum: Children and Families (1–2 Cr Clinical)

*1.0–2.0 Variable Semester Credit Hours*

Prerequisites: concurrent enrollment in NURE 3115, receipt of a research scholar award, file completed, signed contract in student’s Undergraduate/Graduate Nursing Office File

This course is a practicum course taken each semester the student is designated as a Research Scholar. Designation as a Research Scholar is linked to specific undergraduate/graduate student awards. During this practicum course, the student actively participates in selected aspects of a research project with a faculty mentor.

**NURE 3014** Mentored Research Practicum: Community (1–2 Cr Clinical)

*1.0–2.0 Variable Semester Credit Hours*

Prerequisites: Concurrent enrollment in NURE 3115, receipt of a research scholar award, file completed, signed contract in student’s Undergraduate/Graduate Nursing Office File

This course is a practicum course taken each semester the student is designated as a Research Scholar. Designation as a Research Scholar is linked to specific undergraduate/graduate student awards. During this practicum course, the student actively participates in selected aspects of a research project with a faculty mentor.

**NURE 3015** Mentored Research Practicum: Policy (1–2 Cr Clinical)

*1.0–2.0 Variable Semester Credit Hours*

Prerequisite: concurrent enrollment in NURE 3115

This course is a practicum course taken each semester the student is designated as a Research Scholar. Designation as a Research Scholar is linked to specific undergraduate/graduate student awards. During this practicum course, the student actively participates in selected aspects of a research project with a faculty mentor.

**NURE 3090** Topics of Special Interest in Nursing: Adolescent Pregnancy: Nursing Implications of Biological, Psychological, and Sociological Perspectives

*3.0 Semester Credit Hours*

Prerequisites: NURS 3912 or NURS 3926

This course focuses on nursing intervention related to primary, secondary, and tertiary prevention of adolescent pregnancy and parenthood. The course is designed to provide the student with an overview of the nursing implications of interdisciplinary research and non-research literature on this increasing problem of premature childbearing and parenting. The scope of the focus includes the pregnant and parenting adolescent mother and father, the family structure, the community, and the greater society.

**NURE 3091** Independent Study in Nursing

*1.0–3.0 Semester Credit Hours*

Prerequisite: consent of instructor

This elective provides students with the opportunity to expand their knowledge and skills in areas of special interest. Topic and mode of study are agreed upon by student and instructor. The course may be repeated for credit when topics vary. Hours to be arranged.
NURE 3115  Applications of Research in Nursing: Mentored Research Scholars
1.0 Semester Credit Hour
Prerequisites: receipt of Research Scholar Award, file completed, signed contract in student’s Nursing Office file.
The course is taken each semester the student is designated as a Research Scholar. The course provides an opportunity for designated Student Research Scholars to work closely with a faculty member who is actively engaged in the conduct of research and to share learning experiences and gain insights through discussion in a Research Scholar Seminar.

NURE 3304  Contemporary Issues Related to Death and Dying
3.0 Semester Credit Hours
Prerequisites: Generic Process—NURS 3811, NURS 3209; Flexible Process—NURS 3925
This course gives students an opportunity to explore in-depth issues related to death and dying at both the personal and professional level. Emphasizing the positive and necessary values of compassion, listening, and tolerance for the views of others, this course encourages participants to engage in a constructive process of self-discovery about death and dying. Areas of discussion include: valuing, definitions of death, stages of dying, emotions surrounding loss, the business of death (autopsy, funeral, cremations, burial), the ethics of death (advance directives, euthanasia, suicide, assisted suicide, organ donation), and transcultural aspects related to death and dying.

NURE 3306  Introduction to the Role of Childbirth Educator
3.0 Semester Credit Hours
Prerequisites: NURS 3209, NURS 3310, NURS 3811, NURS 3912; admission to Flexible Process
This course will focus on an in-depth exploration of childbirth education. It will utilize the nursing process in an exploration of a nurse’s role in family-centered childbirth education. Students will examine the philosophy of childbirth education and the roles of the childbirth educator in consumer advocacy. Essential childbirth preparation core content and coping techniques will be emphasized in light of family needs and effective teaching strategies. Students will have the opportunity to examine their own values and sociocultural aspects of clients in the assessment, planning, implementation, and evaluation of patient and family teaching.

NURE 3309  Renal Disease, Transplantation, Complications
3.0 Semester Credit Hours
Prerequisites: 1st semester Generic NURS 3811; admission to Flexible Process
This course is an in-depth exploration of the plight of patients as they deal with End Stage Renal Disease resulting from Diabetes and Hypertension. The physical and psychological responses of the patient, family, and community to End Stage Renal Disease and Renal Transplantation are identified. Implications for Nursing to enhance as healthy adjustment to a potentially terminal illness are stressed.

NURE 3369  Hispanic Health Concerns: A Nursing Perspective
3.0 Semester Credit Hours
Prerequisite: NURS 3811 or graduate standing
This course is designed to provide the student with a comprehensive, in-depth view of topics and issues influencing the health of the Hispanic population in order to enhance the cultural sensitivity of the health care provider. An overview of the characteristics of the Hispanic population is given as well as data in relation to lifestyle, major health concerns, and research findings on Hispanic health across the life cycle. The use of folk practices, herbal medicine, and utilization of the health care delivery system and its implications to nursing practice is addressed. The role of the nurse in disease prevention is explored within the framework of the life cycle. Nursing interventions to overcome language barriers are provided including sources for Spanish-language, culturally relevant publications.

NURE 3383  Nursing Care of Children with Developmental Disabilities in the Community
3.0 Semester Credit Hours
Prerequisite: NURS 3811
This is a multidisciplinary course that will include students in nursing, social work, early childhood, and special education. The course will focus on the needs of children with developmental disabilities and their families in the community. Concepts and content to be covered include: family adaptation, normalization, behavioral and school problems, the impact of the Americans with Disability Act and Public Law 99-457, selected disease entities, and assessment of development for early detection of problems. Examination of many issues that exist in the community for children with developmental disabilities as well as transition to independent living will be explored. The role of the nurse on an interdisciplinary team that works to enable and empower families will be modeled for the student.

NURE 3356  Nursing Interventions in Pain
3.0 Semester Credit Hours
Prerequisite: NURS 3811 or NURS 3624
This course is a survey and analysis of current theories about pain and its alleviation and an exploration of nurses’ role in pain management.

NURE 3090  Topics of Special Interest in Nursing: Application of Theory and Scientific Inquiry
3.0 Semester Credit Hours
Prerequisites: minimum GPA: 3.0; senior standing
This course focuses on the development and implementation of a plan for scientific inquiry. A major emphasis is placed on how theory and research affect nursing practice. Attention is given to the selection and study of nursing practice issues pertinent to beginning nursing practice. Each student is guided through a literature review and analysis regarding her/his selected focus. A proposal is developed for a project to study the nursing practice issue and subsequently to explore further the issue through direct experience, e.g., observation and/or participation. Students will have the opportunity to demonstrate leadership qualities through self-directed activities, assessment of findings from activities, and communication of project results. Attention is given to the process of scientific inquiry and the potential implications of results on nursing practice and the health care community.

NURE 3310  Introduction to Computing in Health Care
(2 Cr Theory/1 Cr Lab)
3.0 Semester Credit Hours
Prerequisite: Permission of the instructor
An exploration of the role of the professional nurse in design, implementation, and use of computing and high technology medical devices in the health care setting. Theories of the teaching-learning process, change process, and information management, are used to critically examine issues related to the use of state-of-the-art...
information systems in the health care system. The course includes opportunities for the student to expand cognitive and psychomotor skills in applying a variety of computing applications to complex health care issues.

NURE 3312 Theoretical Foundations of Complementary and Alternative Therapies in Nursing (3 Cr Theory)

3.0 Semester Credit Hours
Prerequisites: This course is offered to generic students who have completed NURS 3811, and flex students who have been admitted to the program.

The purpose of this course is to introduce selected complementary and alternative therapies cited in the health care literature. The course will critically evaluate these complementary and alternative therapies for potential benefit in maintaining and improving health. The course will incorporate current evidence and efficacy relating to use and safety of complementary and alternative therapies.

NURE 4302 Flex Bridge in Critical Care (1 Cr Theory/2 Cr Clinical)

3.0 Semester Credit Hours
Prerequisites: The student must be a licensed LVN or RN and have completed the undergraduate flexible process courses 3624, 3327, and 4212.

Flex Bridge I in Critical Care at University Hospital is offered as a clinical preceptorship in critical care for highly motivated undergraduate students enrolled in the RN completion program. In order to complete the clinical requirements for this course, students are provided the opportunity to rotate through at least 3 critical care areas of the hospital. These include the Surgical Trauma Intensive Care Unit, Pediatric Intensive Care Unit, Neonatal Intensive Care Unit, and the Emergency Department. This is an intense “hands-on” course in which each student is provided with an experienced preceptor in each of the critical care areas they “bridge” in. In addition to the clinical experience, the student will explore various concepts unique to the critical-care environment. These include, but are not limited to, complex case studies, pathophysiology, ethical dilemmas, managed care, etc.

NURE 3316 Chronic Respiratory Illness in Children and Adults (3 Cr Theory)

2.0 Semester Credit Hours
Prerequisites: Undergraduate generic: 3811; Undergraduate flex: 4512

This course is developed to present specialized nursing care of chronic respiratory illnesses across the lifespan. Included in the classroom experiences are relevant issues of the most prevalent respiratory illnesses in the population today. These will be explored in terms of physiologic rationale, clinical indicators, therapeutic goals, patient teaching, and use of specialized respiratory equipment as supported by research and case studies. Special emphasis on care occurring in the community, homes, and schools will be discussed with observational experiences at the American Lung Asthma Camp for Children.

NURE 3321 Animal-Assisted Activities and Therapy in Health Care (3 Cr Theory)

3.0 Semester Credit Hours
Prerequisites: Undergraduate generic: 3811; Undergraduate flex: 4512; Graduate: no graduate course prerequisites; acceptance to the program

This course is designed to explore the use of animal-assisted activities (AAA) and animal-assisted therapy (AAT) in various health care environments including selected observational experiences. An overview of the history and current understanding of the human-animal bond will be discussed including identified benefits as supported by observation, research, and case studies. Relevant national, state, and local organizations, laws, and standards will be introduced. Students will select specific environments, populations, and animals for further explorations. Various animals will be included in the classroom experiences.

NURE 3324 Speaking Spanish to Patients (3 Cr Theory)

3.0 Semester Credit Hours
Prerequisites: NURS 3209, NURS 3310, NURS 3811, or graduate standing

This course is designed to assist students in meeting the needs of Spanish-speaking patients through effective communication. Communication skills in Spanish will be used to gather a variety of data from Spanish-speaking patients and to identify patients’ needs. Verbal elements of Spanish pronunciation and grammar will be included to assist students in the application of the nursing process.

Grades and Progression

The standing of students in their work is expressed by five grades: A (excellent), B (above average), C (average), D (below average), F (failure). Students may also register in certain courses on a pass/fail basis, in which case the grade is recorded as either Credit (CR) or Fail and no letter grade is assigned. All required nursing courses in the Bachelor of Science in Nursing program (Generic Process and Flexible Process) must be taken for a letter grade. A grade may not be changed after it has been reported to the Registrar unless an error has been made by the instructor.

Although a grade of D can be earned in a required nursing course, it is a failing grade, and a grade of C or higher is necessary for progression to the next required course in the sequence or for graduation. In elective nursing courses, credit may be earned for a grade of D.

In computing the grade point average, the following scale of points per semester credit hour is used:

- A = 4 points (90–100)
- B = 3 points (80–89)
- C = 2 points (70–79)
- D = 1 point (60–69)
- F = 0 points (59 or below)

Incomplete Class or Laboratory Work

With the permission of the course instructor, a grade of Incomplete (I) may be recorded if a student in good standing has not completed all class or laboratory assignments. Incomplete work must be made up by the end of the following regular semester after the symbol I is recorded, provided the student does not wish to progress immediately to the next course. If a student wishes to enroll in the next required course, the Incomplete must be removed by the 12th day of the following semester. Incomplete grades not completed within the specified time shall be changed to the grade of F, and the course must be repeated if credit is desired.
Satisfactory Progress
To be considered as making satisfactory progress, a student must maintain a cumulative grade point average of 2.0 or above with no grade lower than C in required upper-division nursing courses.

Students will be required to take nationally normed tests throughout the curriculum and to make satisfactory scores on such tests. In the last semester of the curriculum, students will be required to take a comprehensive exam and to make a satisfactory score on such an exam prior to graduation and/or taking the licensing exam.

Scholastic Probation
A student whose GPA falls below 2.0 but who has no grade lower than C in required upper-division nursing courses will be placed on scholastic probation for one semester/term. If at the end of the semester/term, the student has achieved a GPA of 2.0 or above with no grade lower than C in required nursing courses, he or she will be removed from scholastic probation.

A student who earns a D, F, or WF in a required nursing course will be dismissed and must seek readmission on a space-available basis. Applications for readmission are subject to review by the Subcommittee on Admission, Progression, and Graduation for the Undergraduate Program (APG).

Students who are reinstated following academic dismissal are automatically placed on scholastic probation for the semester/term following readmission, even if her or his GPA is 2.0 or over.

A student who fails to remediate her or his probationary status in one semester/term will be dismissed and will be ineligible for readmission.

A student who fails or withdraws failing from two required nursing courses (or from the same course twice) will be dismissed and will be ineligible for readmission.

Examinations
Examinations must be taken on the date and time scheduled. Policies regarding missed examinations are stated in course syllabi.

Intrasemester Report
At the middle of each semester, the faculty report to the Associate Dean for Undergraduate Nursing Program all students doing work below the passing grade. The Associate Dean, in turn, sends notification to the student(s).

Semester Reports
Grade reports are available to students at the end of each semester, via Web for Students at: http://studentservices.uthscsa.edu/webStudents/studentWEB.html.

Grades in Required Courses
A student must earn a minimum grade of C in each required nursing course. A grade of F in either clinical or theory results in a grade of F in a required course. If a student earns a grade of less than C in a required course and is in good standing in the School of Nursing, the student may apply for readmission. A student who has failed or withdrawn failing from two required courses (or failed the same course twice) is ineligible for readmission.

Leave of Absence
Under special circumstances, the student who is in good standing may be granted a leave of absence from the undergraduate program for a maximum period of one year, upon written application of the student. A leave of absence indicates that the student will be permitted to reenroll within a one-year time limit. A student who does not return within the time limit must apply for readmission.

Readmission
A student who receives less than a C, fails, drops, or withdraws from a required nursing course (Flexible or Generic Process) must complete an application for readmission and request readmission through the Subcommittee on Admission, Progression, and Graduation for the Undergraduate Program. Each student who seeks readmission must have a conference with the Associate Dean for the Undergraduate Nursing Program. Students who have failed or withdrawn failing from two required courses are ineligible for readmission.

Repetition of a Failed Course
A student may apply to repeat a course in the School of Nursing in which he or she has made less than a C, failed, or from which he or she has withdrawn failing. This application will be referred to the Subcommittee on Admission, Progression, and Graduation for the Undergraduate Program for consideration. Students newly admitted and enrolled students have priority consideration for admission to the course over students desiring to repeat the course. If the course is prerequisite to the next clinical course, it must be repeated with at least a C before the student proceeds to the next course.

If a student is allowed to repeat a course failed in the undergraduate program, both clinical and theory are required to be repeated and the official grade recorded is the last one made. The official grade will be the one used in computing a student’s grade point average, and although the failing grade will be on the permanent record, it will not be included in computation. A student may not repeat a course for credit in which the final grade was C or better.

Adding Courses
After registration, during the first four class days of any semester or the first two class days of any summer session, a student may add a course with the approval of the instructor/department chair and the Associate Dean for Undergraduate Nursing Program.

Dropping Courses
Dropping refers to the procedure by which students remove themselves from one or more of the courses in
which they are enrolled while continuing in the remainder of their courses. If a student is enrolled in only one course and wishes to drop that course, he or she must withdraw from the School of Nursing or apply for a leave of absence.

A student may drop a course under the following provisions:

- A student, with the approval of the instructor/departmen chair and the Associate Dean for Undergraduate Nursing Program, drop a course before the first examination/graded assignment without a grade being recorded on the transcript. The symbol Q will be entered on the transcript and grade computation will not be affected.
- With the approval of the instructor/department chair and Associate Dean for Undergraduate Nursing Program, a student may drop a course at any time before the last official class day in any semester. If a passing grade was maintained at the time of the drop, the symbol WP is then recorded. If the student was failing the course at the time of the drop, a WF is recorded.

**Withdrawal**

Withdrawal refers to the procedure by which students remove themselves from all courses in which they are enrolled. A student wishing to withdraw from the School of Nursing for the remainder of a particular session initiates the process through the Academic Coordinator in the undergraduate office in the School of Nursing.

A student who completes a semester but does not plan to continue in the School of Nursing during the next semester must withdraw or apply for a leave of absence.

A student may withdraw, with the approval of the instructor and Department Chair, any time before the last official class day.

If a student withdraws before the first examination/graded assignment, the symbol Q will be entered as the grade for each course in which the student was enrolled and the transcript will indicate withdrawal.

If a student withdraws after the first examination/graded assignment, the symbol WP will be recorded for those courses in which a passing grade was earned, and the symbol WF for those in which a failing grade was earned. The symbol WF is recorded on the transcript but is not computed in the grade point average.

If a student withdraws from a required nursing course while failing, he or she may reenroll only once. (See “Readmission.”)

**Changing Course Registration To or From Pass/Fail**

If the course has an option for a pass/fail or letter grade, the student may change her or his registration from a pass/fail basis to a letter grade basis, or from a letter grade basis to a pass/fail basis, not later than the end of the official drop period which is the first four weeks of the regular semester and the first two weeks of the summer session.

**Correspondence Courses**

Students wishing to enroll for correspondence courses and/or courses in another institution while enrolled in the School of Nursing must obtain permission from the Associate Dean for such courses to be accepted for credit by the School of Nursing. Students must be in good scholastic standing and must have demonstrated their ability to carry the increased course load to receive such permission. Not more than 12 hours of the 120 hours required for the degree may be taken by correspondence.

**Transferring Grades**

An applicant, whether a new student or a former student of the School of Nursing who has attended another college, will submit all previous college records when applying for admission to the School of Nursing. Transferred grades are recorded as submitted. Former students who attended another institution are responsible for providing a transcript of their records to the School of Nursing before reentering.

**Graduate Credit**

Undergraduate students may be admitted to graduate courses in nursing only in the last semester of the senior year. Three credit hours taken by undergraduate students may be applied toward the graduate degree as long as these credits are not used toward the undergraduate degree. Credit may be applied toward the graduate degree only after the student has been admitted to and is enrolled in the graduate program.

**Auditing**

Students may audit nursing courses only with the permission of the instructor teaching the course. Fees for auditing nursing courses are required of students who are not enrolled full-time. Students who are enrolled less than full-time in nursing courses may audit additional nursing courses for a fee of $5 per course. Individuals who are not enrolled in nursing courses may audit nursing courses for a fee of $25 per course. Students must have permission of the instructor to audit a course. No audited courses may be taken subsequently for credit.

**Transfer of Upper-Division Electives**

Upper-division nursing electives taken through another NLN- or CCNE-accredited baccalaureate program may be accepted for credit. The course must be approved by the Committee on Admission, Progression, and Graduation for the Undergraduate Program before credit is granted. Grades earned for upper-level electives can be transferred only to the School of Nursing for credit.

**Graduation Requirements**

To be eligible for graduation, a student must have a 2.0 grade point average for the required 60 semester hours of upper-division course work. At least 30 of the last 33 semester hours of the nursing major must be completed at the School of Nursing in San Antonio.
through credit by examination on this campus will be considered to have been completed in residence.

**Procedures for Degree Candidates**
Degree candidates who are taking upper-division electives off campus must supply the School of Nursing with a transcript from each school where work is done. Transcripts must be submitted as each course is completed.

A candidate for a degree must (1) register in the semester in which the degree is to be received and (2) file a degree application form with the Office of the Registrar during the semester prior to the term in which the degree is to be granted.

It is a requirement that a candidate for the degree be enrolled in the semester or summer session in which the degree is awarded. Candidates who have completed requirements at UTHSCSA but must complete elective requirements at another university during the final term may register in absentia for the purpose of having the degree conferred.

Degrees will be conferred only on official dates publicly announced. Commencement ceremonies are held in May of each year.

**Graduation with Honors**
Students whose upper-division grade point average is above 3.4 will be awarded the degree with honors. The honors designation is noted on the diploma and the transcript, and honor students receive special recognition at graduation ceremonies.

Honors designations are based on the following scale:
- 3.4–3.59  *Cum Laude*
- 3.6–3.79  *Magna Cum Laude*
- 3.8–4.0  *Summa Cum Laude*

**Registration as a Professional Nurse**
A student seeking registration as a professional nurse must take and pass the National Council Licensure Examination for Registered Nurses (NCLEX-RN) administered by the Board of Nurse Examiners for the state of Texas. The Board may refuse to approve persons to take the licensure examination, may refuse to issue or renew a license or certificate of registration, or may refuse to issue a temporary permit to any individual who has been convicted of a felony, a misdemeanor involving moral turpitude, or engaged in conduct resulting in the revocation of probation imposed pursuant to such a conviction.

As of 1996, an individual applying for the NCLEX-RN examination must answer the questions listed below:
1. Have you ever been denied licensure by a licensing/certifying authority in any country, state, or province?
2. Have you ever had disciplinary action taken against you by any licensing/certifying authority in any country, state, or province?
3. Have you ever been convicted of a crime other than minor traffic violations?
4. Have you been diagnosed with or treated or hospitalized in the past five (5) years for schizophrenia or other psychotic disorders, bipolar disorder, paranoid personality disorder, antisocial personality disorder, or borderline personality disorder? (You may answer “no” if you have completed and/or are in compliance with TPAPN, Texas Peer Assistance Program for Nurses, for mental illness.)
5. Have you been addicted or treated for the use of alcohol or any other drug within the past five (5) years? (You may answer “no” if you have completed and/or are in compliance with TPAPN for substance abuse.)
6. Have you ever been issued any order concerning your eligibility for examination or licensure by this Board?

If the answer to any of these questions is “yes,” the student must contact the Board of Nurse Examiners.
- The student will receive ALL applications for Initial Licensure and instructions through the School of Nursing. Completed application forms and fee are turned in to the Undergraduate Office where the form is notarized.
- All 120 hours for the degree must be completed before the student is eligible to take the NCLEX-RN.
- A student planning to take the NCLEX-RN in another state must obtain information regarding procedure from the agency responsible for professional nurse registration in that state.

**General Policies**

**Student Employment**
The nursing program permits students to be enrolled full-time or part-time. Full-time students are encouraged not to plan full-time employment while enrolled in the program. A student’s combined employment and semester-hour load should not exceed 40 hours per week in either long-session semesters or summer terms.

Students may be employed as patient care assistants, performing functions for which they have received training in the institution and for which the institution has a clearly discernible policy either in writing or by precedent defining the scope of these functions. Any individual not licensed in the state of Texas to practice professional nursing who engages in such practice is doing so illegally and may be prosecuted accordingly. Supervision by the professional, licensed nurse does not provide protection to the student or make the student’s actions legal.

Students should be aware that: (1) the School of Nursing assumes no responsibility for their activities as an employee of an agency; (2) the students are personally responsible and liable for any activity they participate in while employed; (3) professional liability insurance purchased by students through the School of Nursing is only valid in their student roles, not their employment roles; (4) individuals who practice illegally may jeopardize their future, as persons who are convicted of violation of the
Nurse Practice Act may not be eligible to take the NCLEX-RN and subsequently receive licensure.

Students employed in an agency have the responsibility, personally and professionally, to engage only in those activities which fall within their job description as non-professional workers (i.e., aides). They have a responsibility to refuse to participate in activities which they have not been legally licensed to perform (i.e., giving medication, assuming total responsibility for a division, etc.).

Students may not wear their school patch or student name badge at their place of employment.

**Professional Liability Insurance**

All students enrolling in nursing courses will be required to show evidence of professional liability insurance coverage in at least a minimum amount of $1,000,000 limit each claim and $3,000,000 limit aggregate in order to complete registration. Such insurance must be purchased through the University at the time of registration. Coverage is required from the student's first day of class throughout her or his program of study. Liability insurance purchased through the University is applicable to the student role only.

**Uniforms**

Students are responsible for purchasing white uniforms and laboratory coats. For some clinical experiences white blouses/shirts and navy skirts/pants will be required. Identification patches will be worn on all uniforms and laboratory coats and may be purchased from the Health Science Center Bookstore.

**Change of Address**

If a student, after registration, changes her or his home or campus address, he or she is expected to notify the Office of Student Services (or go to [http://studentservices.uthscsa.edu/students.html](http://studentservices.uthscsa.edu/students.html) and click on “Web for Students”) and the Undergraduate Office in the School of Nursing. The student will be held responsible for any communication from the school offices sent to the address last given.

**Full-Time Student Status**

A full-time undergraduate student is one who is registered for 12 or more semester credit hours during a regular semester. Full-time enrollment is six or more semester credit hours in one summer session or nine semester credit hours in two sessions of one summer.

**Transportation**

Students must provide their own transportation to the various agencies for clinical experience. Parking fees associated with clinical practice are the responsibility of the student.

**Classes and Clinical Practicum**

Classes and clinical practicum experiences may be held during the day or evening hours or on weekends. The time of day for class and clinical offerings varies from semester to semester and from course to course. Thus, a student may expect to attend a class or clinical practicum during the evening hours or weekend at some point during the completion of the Generic Process curriculum or Flexible Process curriculum.

**Organizations**

Organizations for students of the School of Nursing as well as groups whose membership is open to all UTHSCSA students are described in the [*UTHSCSA Student Guide*](http://studentservices.uthscsa.edu/students.html).

**Expenses**

Approximate costs are available through Nursing Admissions or the Office for Students.
Graduate Program in Nursing

The Health Science Center’s Graduate Program in Nursing is designed to provide qualified individuals with educational opportunities which will enable them to make significant contributions to the improvement of health care, the science of nursing, and the advancement of nursing practice. The purpose of this program, leading to the degrees Master of Science in Nursing or Doctor of Philosophy, is to provide nurses with opportunities to become prepared for advanced clinical practice, for roles as educators or administrators, or as clinical nurse scientists.

Administration

The Graduate Program in Nursing is administered through the Graduate School of Biomedical Sciences of The University of Texas Health Science Center at San Antonio. While faculty of the School of Nursing determine the curriculum, the graduate nursing program shares common policies related to students’ admission, progression, and graduation with other academic programs in the Graduate School which are within the administrative responsibility of the Dean of the Graduate School and the Graduate Faculty Council.

The Committee on Graduate Studies (COGS) of the nursing program has responsibility to the Graduate School of Biomedical Sciences in administrative policy matters and to the School of Nursing relative to curriculum. The committee is responsible for recommending the admission of students to the nursing program, determining the curriculum, attesting to the eligibility of students for admission to candidacy for a degree, and certifying to the Graduate Faculty Council that students have fulfilled the requirements for the awarding of the degree. The Graduate Faculty Council establishes and maintains academic policy and makes recommendations to the President for the awarding of all master’s and doctoral degrees.

Consistent with the philosophy of the School of Nursing, graduate nursing education at The University of Texas Health Science Center at San Antonio is designed to offer professional nurses the opportunity to prepare themselves to assume leadership roles in patient care activities, teach in schools of nursing, manage patient care services within institutions or health care agencies, and conduct independent research. Preparation for the master’s degree is available through two options: the registered nurse with a baccalaureate in nursing will proceed with the master’s program. The registered nurse with an associate degree in nursing or a diploma in nursing may qualify for admission to a special early master’s option, the ADN/Diploma—MSN. The doctoral degree is a post-baccalaureate degree program.

In order to provide nurses with the opportunity to develop the high level of competence and expertise necessary for leadership positions, the graduate nursing curriculum includes content in the theory and practice of nursing, development of skills in the research process, consideration of nursing’s present and future role in the health care system, and analysis of the social and ethical problems associated with professional issues. Through the curriculum, nursing educators, administrators, researchers, and consultants are being provided with the opportunity to practice their unique skills in a variety of settings.

Admission and Application

Requirements for admission to the graduate program are detailed in the Applicant Viewbook of the School of Nursing (available in print and on the Web at http://studentservices.uthscsa.edu/publications/nursing.html). Official application forms and deadlines for submission also are included in the Viewbook.

Master of Science in Nursing

Objectives

The objectives of the master’s program are designed to offer the student the opportunity to:

1. Synthesize knowledge underlying quality nursing practice based on present and projected needs of individuals and society.
2. Demonstrate knowledge and skill as an administrator, educator, and/or advanced practice nurse.
3. Advance patient care by initiating intra/interprofessional collaboration and consultation.
4. Demonstrate leadership attributes to improve nursing and health care delivery.
5. Evaluate relevant theories and constructs for their contribution to present and future nursing practice.
6. Define researchable nursing problems.
7. Apply research methods and findings to improve nursing practice, education, and/or administration.
8. Use critical thinking as a basis for the resolution of issues in nursing and health-related problems of society.
9. Demonstrate commitment to the advancement of professional nursing and quality health care.
10. Serve as an advocate for better health care for all individuals, especially disadvantaged, diverse, and underserved populations.

Degree Requirements

For the Master of Science in Nursing degree, a minimum of 36 semester credit hours of upper-division and graduate courses is required. All coursework must be completed within five years of enrollment in the program. A student must achieve no less than the total number of semester credit hours for the specific major/degree program, which may exceed 36 semester credit hours, in order to graduate. The program of study includes: 1) required courses, 2) major, 3) thesis or elective credit, and 4) minor (elective). Graduate electives are offered in the School of Nursing or they may be taken at other universities.
To graduate, a student must have an overall minimum GPA of 3.0, at least a 3.0 average in nursing courses, no more than one C in a clinical major course, and no incomplete grades.

Students must be recommended by the Nursing Program Committee on Graduate Studies and approved by the Graduate Faculty Council of the Graduate School of Biomedical Sciences for admission to candidacy for the MSN degree and for graduation.

The program is designed to be completed in 18–24 months of full-time study for students entering in the fall semester; however, part-time enrollment is feasible within the program plan. Selected courses may be offered during summer sessions, but students should not anticipate completing the program by attending summer sessions only or by attending less than three regular semesters. A clinical preceptorship also may be required.

**Admission to Candidacy**

A student who has satisfactorily completed a minimum of 20 semester credit hours of coursework applicable to the degree may be admitted to candidacy for the Master of Science in Nursing degree upon such recommendation of the Committee on Graduate Studies to the Dean of the Graduate School of Biomedical Sciences. A student must be admitted to candidacy no later than the beginning of the semester in which he or she expects to graduate.

**Curriculum**

**The Semester Credit Hour**

The unit of measure for credit purposes is the semester credit hour. One semester credit hour is given for each one clock hour of class, one clock hour of seminar, or three clock hours of laboratory/practicum/computer lab experience per week, per semester, with the exception of selected and summer sessions during which the class, seminar, and practicum hours may be concentrated but provide equivalent clock hours.

**Course Numbers**

NURS designates all required, major, minor, or special nursing courses. NURE designates nursing electives. A four-digit course identification number follows: the first digit indicates the earliest level at which a course may be taken or at which a course is usually taken (5, 6, and 7 indicate graduate level); the second digit indicates the semester credit hours given for the course.

**MSN Semester Credit Hour Requirements**

Of the minimum 36 semester credit hours of upper-division and graduate courses required for the MSN, 24 credit hours of coursework must be taken in residence. (Elective courses may be taken outside the School of Nursing.) The program may be completed in five semesters of full-time study. Part-time enrollment is an option.

**Associate Degree in Nursing/Diploma in Nursing—Master of Science in Nursing Option**

The ADN/Diploma—MSN, or early master’s option, requires completion of 20 semester credit hours of undergraduate nursing courses at the School of Nursing with a grade point average of 3.0 or higher. Of the minimum 36 semester credit hours of upper-division and graduate courses required for the MSN, 24 credit hours of coursework must be taken in residence. (Elective courses may be taken outside the School of Nursing.) The program may be completed in five semesters of full-time study. Part-time enrollment is an option.

**Graduate Required Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>NURS 5306</td>
<td>Nursing Science I</td>
<td>3.0</td>
</tr>
<tr>
<td>NURS 5307</td>
<td>Nursing Science II</td>
<td>3.0</td>
</tr>
<tr>
<td>NURS 5226</td>
<td>The Nurse’s Role in Financial Planning</td>
<td>2.0</td>
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<tr>
<td>NURS 5264</td>
<td>Nursing Leadership and Health Policy</td>
<td>2.0</td>
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</tbody>
</table>

**TOTAL** 10.0

**Major**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester Credit Hours</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Acute Nursing Care of the Adult</td>
<td>18.0</td>
</tr>
<tr>
<td></td>
<td>Administration in Community and Healthcare</td>
<td>20.0</td>
</tr>
<tr>
<td></td>
<td>Systems in Nursing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Family Nurse Practitioner</td>
<td>35.0</td>
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<tr>
<td></td>
<td>Pediatric Nurse Practitioner</td>
<td>30.0</td>
</tr>
<tr>
<td></td>
<td>Gerontological Nurse Practitioner</td>
<td>31.0</td>
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<tr>
<td></td>
<td>MSN/Master of Public Health (dual degree)</td>
<td>varies</td>
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<tr>
<td></td>
<td>Thesis or Elective Courses</td>
<td>2.0–6.0</td>
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**Undergraduate Required Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>NURS 4212</td>
<td>Strategies for Professional Nursing: Health Assessment</td>
<td>2.0</td>
</tr>
<tr>
<td>NURS 4512</td>
<td>Strategies for Professional Nursing: Health Promotion</td>
<td>5.0</td>
</tr>
<tr>
<td>NURS 4214</td>
<td>The Nurse as Professional: Research</td>
<td>2.0</td>
</tr>
<tr>
<td>NURS 4312</td>
<td>The Nurse as Professional: Leadership</td>
<td>3.0</td>
</tr>
<tr>
<td>NURS 4310</td>
<td>Strategies for Professional Nursing: The Family Across the Lifespan</td>
<td>3.0</td>
</tr>
<tr>
<td>NURS 4514</td>
<td>Strategies for Professional Nursing: Community as Partner</td>
<td>5.0</td>
</tr>
</tbody>
</table>

*Students admitted to the ADN/Diploma to Masters Degree option who have completed NURS 4514 Strategies for Professional Nursing: Community as Partner, and who have attained a minimum 3.0 grade point average in all courses taken at the undergraduate level, are immediately eligible to enroll in graduate courses. These students may enroll in any of the four (4) graduate core courses, and/or a total of six (6) hours of electives. These students may petition for admission to the graduate program in the next semester (fall, spring, or summer). Credit for all courses taken at the graduate level may be applied toward the graduate degree after the student has been admitted to and is enrolled in the graduate program.*
(Courses are described in the “Flexible Process” section of the undergraduate portion of this Catalog.)

Graduate Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Semester Credit Hours</th>
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<tr>
<td>NURS 5306   Nursing Science I</td>
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<td>NURS 5307   Nursing Science II</td>
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<tr>
<td>NURS 5226   The Nurse’s Role in Financial Planning in Healthcare Organizations</td>
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</tr>
<tr>
<td>NURS 5264   Nursing Leadership and Health Policy</td>
<td>2.0</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>10.0</strong></td>
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</table>

Major Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Semester Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSN/Master of Public Health (dual major)</td>
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</tr>
<tr>
<td>This dual degree major provides an opportunity for the student to receive two degrees with one thesis and fewer total credit hours than would otherwise be required for the two separate degrees. The coordinated curriculum includes: (1) science-based and clinical courses in a nursing specialty, (2) public health science core courses, and (3) joint courses taught by nursing and public health faculty. Students in all advanced practice clinical specialty areas may select this program. Students must also apply for and be accepted into the MPH program at The University of Texas-Houston Health Science Center School of Public Health. All coursework may be taken in San Antonio. Selected courses will incorporate distance education strategies, including video teleconferencing. Program of study varies, based on the student’s selected clinical nursing major.</td>
<td></td>
</tr>
</tbody>
</table>

Acute Nursing Care of the Adult

Prefer that applicants have two years of clinical practice experience

NURS 5306 Nursing Science I

3.0 Semester Credit Hours

Prerequisite: Graduate standing

This course is designed to help students explore the development of nursing knowledge and theory. The course is grounded in the experience of nursing as a caring practice profession. The process of theory generation and concept analysis will be an integral part of this course. Students are encouraged to examine their own experiences, the philosophy and theories that have guided their practice as they evaluate extant nursing theories through inductive methods.

Clock hours: three class hours per week.

NURS 5307 Nursing Science II

3.0 Semester Credit Hours

Prerequisite: NURS 5306

This course is designed to further nursing science through knowledge utilization and the testing of theoretical propositions. Students will be given the opportunity to apply qualitative/quantitative research methods to nursing problems identified in their practice. Inductive and deductive approaches will be explored. The focus of this course is to acquire knowledge and understanding of research reported in the literature, critique findings, and apply to practice.

Clock hours: three class hours per week.

NURS 5226 The Nurse’s Role in Financial Planning in Healthcare Organizations

2.0 Semester Credit Hours

Prerequisite: Graduate standing

This course focuses on the economic impact of fiscal policies in health care organizations. The fiscal components of the budgetary process in the health care organizations as well as the concepts of costs, skill mix, budget development, and marketing will be discussed. Methods of analyzing budget reports will be explored. In addition, the relationship of the economic environment and health care costs and their implications for nursing practice will be examined.

NURS 5264 Nursing Leadership and Health Policy

2.0 Semester Credit Hours

Prerequisite: Graduate standing

The theories germane to leadership will be explored in relation to organizational structures and behaviors. These structures and behaviors will be related to the development of leadership styles and policy making within organizations. Emphasis will also be placed on the political and economic forces that influence the development of health policy and professional nursing practice. In addition, the basis for legal/ethical dimensions of the nursing practice at the advanced level will be explored.

Course Descriptions

Required Courses

NURS 5306 Nursing Science I

3.0 Semester Credit Hours

Prerequisite: Graduate standing

This course is designed to help students explore the development of nursing knowledge and theory. The course is grounded in the experience of nursing as a caring practice profession. The process of theory generation and concept analysis will be an integral part of this course. Students are encouraged to examine their own experiences, the philosophy and theories that have guided their practice as they evaluate extant nursing theories through inductive methods. Clock hours: three class hours per week.

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Prerequisite: NURS 5306

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2.0 Semester Credit Hours

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This course focuses on the economic impact of fiscal policies in health care organizations. The fiscal components of the budgetary process in the health care organizations as well as the concepts of costs, skill mix, budget development, and marketing will be discussed. Methods of analyzing budget reports will be explored. In addition, the relationship of the economic environment and health care costs and their implications for nursing practice will be examined.

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Major Courses

MSN/Master of Public Health (MPH) (dual major)

This dual degree major provides an opportunity for the student to receive two degrees with one thesis and fewer total credit hours than would otherwise be required for the two separate degrees. The coordinated curriculum includes: (1) science-based and clinical courses in a nursing specialty, (2) public health science core courses, and (3) joint courses taught by nursing and public health faculty. Students in all advanced practice clinical specialty areas may select this program. Students must also apply for and be accepted into the MPH program at The University of Texas-Houston Health Science Center School of Public Health. All coursework may be taken in San Antonio. Selected courses will incorporate distance education strategies, including video teleconferencing. Program of study varies, based on the student’s selected clinical nursing major.

Acute Nursing Care of the Adult

Prefer that applicants have two years of clinical practice experience

NURS 5306 Nursing Science I

3.0 Semester Credit Hours

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This course is designed to help students explore the development of nursing knowledge and theory. The course is grounded in the experience of nursing as a caring practice profession. The process of theory generation and concept analysis will be an integral part of this course. Students are encouraged to examine their own experiences, the philosophy and theories that have guided their practice as they evaluate extant nursing theories through inductive methods. Clock hours: three class hours per week.

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2.0 Semester Credit Hours

Prerequisite: Graduate standing

The theories germane to leadership will be explored in relation to organizational structures and behaviors. These structures and behaviors will be related to the development of leadership styles and policy making within organizations. Emphasis will also be placed on the political and economic forces that influence the development of health policy and professional nursing practice. In addition, the basis for legal/ethical dimensions of the nursing practice at the advanced level will be explored.
NURS 5510  Acute Nursing Care of the Adult I
5.0 Semester Credit Hours
Prerequisites: NURS 5226/or concurrently, NURS 5306/or concurrently, NURS 5338, NURS 6307
This course deals with general concepts related to adult patients experiencing varying degrees of disruption in their health status. There is the opportunity to identify researchable problems and to design, implement, and evaluate nursing care. The role components of advanced practice will be examined. Clinical experience will focus on applying course concepts to patient care management in a multidisciplinary setting. Opportunities will be provided to examine advanced practice roles in acute care settings and clinics. Multicultural and social issues influencing acute care nursing will be examined. Clock hours: two class hours and six practicum hours per week.

NURS 5411  Acute Nursing Care of the Adult II
4.0 Semester Credit Hours
Prerequisites: NURS 5264/or concurrently, NURS 5307/or concurrently, NURS 5410
This course builds on general concepts from NURS 5510 Acute Nursing Care of the Adult I and focuses on diagnosis and management of selected clinical problems. The current science, trends, and standards relevant to acute care nursing will be examined. Students will have the opportunity to apply in-depth knowledge of pathophysiological processes and related research in an area of clinical concentration to improve patient care outcomes. Clinical experience will focus on implementation and evaluation of the roles of the advanced practice nurse. Clock hours: two class hours and six practicum hours per week.

Administration in Community and Health Care Systems in Nursing

NURS 5310  Administrative Strategies and Nursing Systems
3.0 Semester Credit Hours
Prerequisites: NURS 5226/or concurrently, NURS 5264/or concurrently
This course examines contemporary influences, theories, principles, and functional strategies related to organizational and management science. Included are the influence of the external and internal environment on complex systems, role relationships, planning, structure, communication, negotiation, and consultation as they apply to health care management concerns. Clock hours: three class hours per week.

NURS 5311  Nursing Assessment of Populations
3.0 Semester Credit Hours
Prerequisite: graduate standing
This course explores the acquisition of knowledge about a community of interest and its health problems. Communities of interest may include populations within organizations, neighborhoods, or communities. Sources of both qualitative and quantitative information about selected populations and their health problems will be addressed. Students will be given an opportunity to gain experience in the identification of population characteristics, problem measurement, and the identification of “communities of solution.” For their clinical activities, students may choose population aggregates in a variety of settings compatible with their area of interest. Clock hours: two seminar hours and six practicum hours per week.

NURS 5409  Strategic Problem Solving in Nursing
4.0 Semester Credit Hours
Prerequisites: NURS 5310, NURS 5311
This course and practicum provide an opportunity to explore problems which affect client population aggregates in a variety of health care settings. The emphasis of the course is understanding and application of the problem-solving process in a focal area at the midmanagement level. Using problem-solving frameworks, processes, and strategies, students will be given an opportunity to identify, analyze, and evaluate selected problems confronting the system. Clock hours: two class hours and six practicum hours per week.

NURS 5501  Financial Management and Decision Support Systems for Nursing Administrative Practice
5.0 Semester Credit Hours
Prerequisite: NURS 5226
This course considers advanced financial management concepts (financial statements, capital budgeting, forecasting, rate setting, costing out of nursing services) and is an introduction to the concepts of decision-support systems in the administration of community and health care services. Clock hours: three class hours and six practicum hours per week.

NURS 5561  Advanced Nursing Practicum in Policy and Management
5.0 Semester Credit Hours
Prerequisites: NURS 5307, NURS 5409, NURS 5501
The purpose of this course is to provide the student with the opportunity to examine the role of the nurse executive in a health care agency. Emphasis is placed on the development of interdisciplinary relationships, long-range planning skills, organizational priority setting, fiscal management, and policy setting. The student will be assigned to an institutional or community-based health care setting under the preceptorship of an experienced nurse executive for the practicum portion of the course. Clock hours: two seminar and twelve practicum hours per week.

Family Nurse Practitioner (FNP)
Applicants for the FNP clinical major must be prepared to make a commitment to work with medically underserved populations, as defined by federal guidelines, upon completion of the program.

NURS 6308  Mental Health Concepts for Advanced Nursing Practice
3.0 Semester Credit Hours
Prerequisite: graduate standing
This course emphasizes the development of advanced practice nursing skills on mental health. Individually supervised practice, analysis and evaluation of the interpersonal process with culturally diverse clients experiencing psychological stress and dysfunction across the lifespan is employed. An opportunity for students to use a holistic perspective to examine the etiology, meaning, and consequences of human behavior is provided. Biological, cultural, psychological, and social aspects of mental health and mental health care are considered. A special emphasis is placed on assessment and detection of actual and potential mental health problems, developmental assessment, crisis intervention, pharmacological management, other biological therapies, and consultation/referral to other mental health professionals. Clock hours: two seminar hours and three practicum hours per week.
NURS 5311 Nursing Assessment of Populations  
3.0 Semester Credit Hours  
(See "Administration in Community and Health Care Systems in Nursing.")

NURS 6302 Pharmacotherapeutics for Advanced Nurse Practitioners  
3.0 Semester Credit Hours  
Prerequisite: NURS 5338  
This course provides advanced nurse practitioner students the opportunity to acquire knowledge and skills in the therapeutic use of pharmacologic agents in the practice of primary health care. Principles of pharmacokinetics and pharmacodynamics will be examined. The history of disease, pathophysiology, symptomatology, and pharmacologic treatment of major health problems that affect South Texans will be explored. Potential reactions of various cultural groups to prescribed agents will be emphasized, including adherence, cost of drug, values and beliefs, and individual responses to therapy. The roles of physician and nurse, relative to prescriptive authority, will be fully addressed. Clock hours: three class hours per week.

NURS 6307 Health Assessment Across the Lifespan for Advanced Practice Nurses  
3.0 Semester Credit Hours  
Prerequisite: undergraduate health assessment or comparable experience  
The theoretical and clinical basis for assessment in advanced nursing practice will be developed. The process whereby the advanced practitioner utilizes comprehensive physical, psychosocial, and cultural assessment across the lifespan to gather specific data relevant to common health problems is demonstrated. Faculty and preceptors facilitate laboratory and clinical experiences which focus on assessment of clients and presentation of findings in a variety of settings. Lab fee: $30. Clock hours: two seminar hours and three practicum hours per week.

NURS 6603 Family Nurse Practitioner Role and Management I: Health Management of Adults and Older Families  
6.0 Semester Credit Hours  
Prerequisites: NURS 5338, NURS 6307, NURS 6302, NURS 5311  
Using a health framework that responds to the diversity of populations from rural to inner-city and to the cultural diversity of South Texas, this course will focus on the role of the family nurse practitioner working collaboratively with physicians and other providers, as well as the community, to help meet the primary health care needs. Health promotion of mature and aging families is stressed, incorporating the management of symptom complexes or health deviations common to this age group. Prevention of illness and management of minor acute health problems, with cultural competence will be emphasized. Experience in the use of clinical management skills as direct caregiver will take place in various primary care settings such as rural health clinics, county health departments, health maintenance organizations, ambulatory clinics, and physician offices. The role of the FNP as a vital force in contemporary health care of Texans will be explored. Lab fee: $30. Computer lab fee: $30. Clock hours: 3 hours class; 9 hours practicum per week. Must be willing to travel.

NURS 6604 Family Nurse Practitioner Role and Management II: Health Management of Young Families  
6.0 Semester Credit Hours  
Prerequisite: NURS 6603  
Using a health framework that responds to the diversity of populations from rural to inner-city and to the cultural diversity of South Texas, this course will focus on the role of the FNP in health promotion and in the management of symptom complexes or health deviations which commonly affect members of young families. Prevention of illness and management of acute health problems, with cultural sensitivity, will be emphasized. Experience in the use of clinical management skills as direct caregivers will take place in various primary care settings such as rural health clinics, county health departments, health maintenance organizations, ambulatory clinics, and physician offices. The role of the FNP as a vital force in contemporary health care of Texans will be explored. Lab fee: $30. Clock hours: 3 hours class; 9 hours practicum. Must be willing to travel.

NURS 6906 Family Nurse Practitioner Seminar and Preceptorship  
9.0 Semester Credit Hours  
Prerequisite: completion of all coursework  
This seminar runs concurrently with the Family Nurse Practitioner Preceptorship. It is intended to be a synthesizing experience in the development and implementation of the role of the FNP in a collaborative, interdisciplinary model. Integration of the theoretical and practical knowledge to contribute to the primary health care needs of socio-culturally diverse families and the community is emphasized. Two hours seminar and 24 hours preceptorship. Must be willing to travel.

Gerontological Nurse Practitioner (GNP)  
NURS 6910 Gerontological Nurse Practitioner Roles & Management I: Functional Assessment & Health Promotion of Older Adults  
6.0 Semester Credit Hours  
Prerequisites: NURS 6307, NURS 5338, NURS 6302, NURS 6308, and NURS 5311  
The focus of this course is the Gerontological Nurse Practitioner (GNP) student utilization of nursing frameworks that encompasses older adults’ function, health assessment, and health promotion. A major focus of this course is the role of the GNP working collaboratively with physicians and other health care providers, as well as the community, to meet primary health care needs of the well and sick older adult. The GNP’s role in health assessment, health promotion, and functional assessment of older adults to meet the needs of culturally diverse populations, particularly South Texans, is stressed. Attention is given to theories, research, and instruments appropriate for use in screening and assessing older adults’ health and functional status. The course also emphasizes the development of advanced practice nursing skills in the area of older adults’ reproductive problems among culturally diverse populations. Ethical and legal issues affecting the GNP will be considered. Must be willing to travel.
NURS 5933 Pediatric Nurse Practitioner Roles and Management III: The Preceptorship

6.0 Semester Credit Hours
Prerequisite: completion of all major coursework
This course provides an opportunity to assume responsibility for the primary health care services of children under the supervision of an established primary health care provider. Students will be required to show the ability to function as a Pediatric Nurse Practitioner (PNP), demonstrating an ability to synthesize a comprehensive treatment plan that includes planning, implementing, evaluating, and documenting primary health care for children. It is intended to be a synthesizing experience in the development and implementation of the role of the Pediatric Nurse Practitioner within a collaborative, interdisciplinary model. Students will be required to show the ability to integrate previous clinical experiences and theoretical knowledge to provide primary health care to culturally diverse children within the South Texas community. Must be willing to travel.

NURS 5932 Pediatric Nurse Practitioner Roles and Management II: Health Management of Infants, Children, and Adolescents with Minor Acute and Chronic Illnesses

6.0 Semester Credit Hours
Using a health framework that responds to the needs of populations from rural to inner-city and to the cultural diversity of South Texas, this course will focus on the role of the Pediatric Nurse Practitioner (PNP) in health promotion and management of minor acute and chronic symptom complexes, which commonly affect children. The role of the PNP as a vital force in contemporary health care of children will be explored. Management of selected minor acute and chronic health problems using culturally sensitive clues will be emphasized. Experience in the use of clinical management skills as direct caregiver will take place in various primary care settings such as rural health clinics, country health departments, health maintenance organizations, ambulatory clinics, client homes, assisted living homes, skilled nursing facilities, and physician offices. Must be willing to travel.

Pediatric Nurse Practitioner (PNP)
Applicants for the PNP clinical major must have clinical practice experience focused among pediatric age-group clients.

NURS 6307 Health Assessment Across the Lifespan for Advanced Practice Nurses
3.0 Semester Credit Hours
(See “Family Nurse Practitioner.”)

NURS 5338 Pathophysiology for Advanced Practice Nurses
3.0 Semester Credit Hours
Prerequisite: Graduate standing
(See “Acute Nursing Care of the Adult.”)

NURS 6302 Pharmacotherapeutics for Advanced Nurse Practitioners
3.0 Semester Credit Hours
(See “Family Nurse Practitioner.”)
Minor Courses
Administration in Nursing
NURS 5310 Administrative Strategies and Nursing Systems
3.0 Semester Credit Hours
Prerequisites: NURS 5226 or concurrently, NURS 5264 or concurrently
This course examines contemporary influences, theories, principles, and functional strategies related to organizational and management science. Included are the influence of the external and internal environment on complex systems, role relationships, planning, structure, communication, negotiation, and consultation as they apply to healthcare management concerns.
Clock hours: three class hours per week.

NURS 5501 Financial Management and Decision Support Systems for Nursing Administrative Practice
5.0 Semester Credit Hours
Prerequisite: NURS 5226
This course considers advanced financial management concepts (financial statements, capital budgeting, forecasting, rate setting, costing out of nursing services) and is an introduction to the concepts of decision-support systems in the administration of community and health care services.
Clock hours: three class hours and six practicum hours per week.

Teaching of Nursing
NURS 5371 Curriculum and Instruction in Nursing
3.0 Semester Credit Hours
This course is designed to give students the opportunity to develop concepts of decision-support systems in the administration of community and health care services.
Clock hours: three class hours per week.

NURS 5372 Roles of the Teacher in Nursing
3.0 Semester Credit Hours
Prerequisite: NURS 5371
This course focuses on the investigation of the roles of the educator in contemporary nursing. The course provides the opportunity to design, implement, and evaluate learning experiences in settings such as nursing programs, staff development, and/or continuing education. Emphasis is on the application of teaching, learning, and evaluation strategies.
Clock hours: one class hour every week, one practicum simulation hour every week, and five practicum hours average per week.

Informatics in Nursing
NURS 5315 Information Systems in Health Care and Nursing
3.0 Semester Credit Hours
Prerequisites: graduate standing and demonstration of prerequisite computer competencies
This course is an introduction to the health care and nursing computing environment. Information applications that affect health care and nursing will be emphasized. Strategic planning, selecting key personnel for the development team, determining and communicating information needs, staff education, administrative uses of information systems, and the legal/ethical issues of clinical information systems and the computerized patient record are discussed. The roles of the clinical professionals in this process are emphasized.
Clock hours: two and one-half class hours and one and one-half practicum hours.

NURS 5317 Practice and Knowledge in Health Care and Nursing Informatics
3.0 Semester Credit Hours
Prerequisites: graduate standing and demonstration of prerequisite beginning computer competencies
This course provides a basis for understanding the impact of the Information Age and Technology on health care practice. The relationship of knowledge development in health science and the nature and structure of human knowledge are explored as a basis for critical thinking. Theoretical and applied approaches furnish a basis for understanding and participating in the development of informatics systems in health care and nursing. Emphasis is on the use of technology to access knowledge and to create research-based practice protocols for informed clinical decision making in health care and nursing.
Clock hours: two and one-half class hours and one and one-half practicum hours.

Thesis
NURS 6298 Development of a Thesis Proposal
2.0 Semester Credit Hours
Prerequisites: NURS 5306 and NURS 5307, and consent of thesis advisor
The focus of this course is development and refinement of the thesis proposal. The course is completed when the proposal is approved by the thesis advisors.

NURS 6098 Thesis
1.0–4.0 Semester Credit Hours; credit to be arranged
Prerequisite: consent of thesis advisor
A total of 6.0 semester credit hours (including 2.0 semester credit hours for NURS 6298 Development of a Thesis Proposal) is required for thesis credit. (Completion of thesis is recommended but not required within the master’s program. Specific policies regarding theses are available from the Office of the Graduate Nursing Program.)

Special Courses
NURS 5327 Gerontological Nursing
3.0 Semester Credit Hours
This course provides an in-depth study of human aging with a focus on nursing care issues. Concepts that are presented include bio-psycho-social changes with aging, mental health/illness, family/cultural/social issues, specific nursing care problems, and health policy related to the elderly. Students are expected to analyze and critique the most recent research related to the topics presented and actively participate in a problem-solving approach to nursing care issues related to the older client.
Clock hours: three class hours per week. (This course may be combined with an additional independent study course for a practicum.)

NURS 6303 Acute Nursing Care: Critical Care
3.0 Semester Credit Hours
Prerequisite: experience in critical care or intermediate care unit
This course is designed to give students the opportunity to develop the focal area of critical care nursing. The course investigates
current issues and technological advances. The clinical experience is a significant portion of the course, and will take place in areas which reflect the student’s area of interest. Students will be given an opportunity to demonstrate inter- and intradisciplinary interactions, problem solving, and critical thinking abilities within the critical care arena. In the clinical setting, students will look at theoretical nursing constructs and identify researchable nursing problems. The students will be expected to demonstrate the role of the clinical nurse specialist in the critical care setting. Students are expected to exhibit accountability and commitment to professional growth through scholarly endeavors.

Clock hours: one and one-half class hours and four and one-half practicum hours per week

NURE 5001 Mentored Research Practicum: State of the Science
1.0–2.0 Variable Semester Credit Hours
Prerequisites: receipt of a research scholar award; concurrent enrollment in NURE 5115; submit a completed, signed student/faculty mentor contract for student’s Graduate Nursing Office file
These courses are a series of practicum courses, one course taken, as appropriate, each semester that the student is designated as a Research Scholar. Designation as a Research Scholar is linked to specific graduate student awards and specific stages of the research process. During this practicum course the student actively participates in selected aspects of a research project with a faculty mentor.

NURE 5002 Mentored Research Practicum: Proposal Development
1.0–2.0 Variable Semester Credit Hours
Prerequisites: receipt of a research scholar award; concurrent enrollment in NURE 5115; submit a completed, signed student/faculty mentor contract for student’s Graduate Nursing Office file
These courses are a series of practicum courses, one course taken, as appropriate, each semester that the student is designated as a Research Scholar. Designation as a Research Scholar is linked to specific graduate student awards and specific stages of the research process. During this practicum course the student actively participates in selected aspects of a research project with a faculty mentor.

NURE 5003 Mentored Research Practicum: Instrumentation
1.0–2.0 Variable Semester Credit Hours
Prerequisites: receipt of a research scholar award; concurrent enrollment in NURE 5115; submit a completed, signed student/faculty mentor contract for student’s Graduate Nursing Office file
These courses are a series of practicum courses, one course taken, as appropriate, each semester that the student is designated as a Research Scholar. Designation as a Research Scholar is linked to specific graduate student awards and specific stages of the research process. During this practicum course the student actively participates in selected aspects of a research project with a faculty mentor.

NURE 5004 Mentored Research Practicum: Statistical Methods
1.0–2.0 Variable Semester Credit Hours
Prerequisites: receipt of a research scholar award; concurrent enrollment in NURE 5115; submit a completed, signed student/faculty mentor contract for student’s Graduate Nursing Office file
These courses are a series of practicum courses, one course taken, as appropriate, each semester that the student is designated as a Research Scholar. Designation as a Research Scholar is linked to specific graduate student awards and specific stages of the research process. During this practicum course the student actively participates in selected aspects of a research project with a faculty mentor.

NURE 5005 Mentored Research Practicum: Proposal Testing
1.0–2.0 Variable Semester Credit Hours
Prerequisites: receipt of a research scholar award; concurrent enrollment in NURE 5115; submit a completed, signed student/faculty mentor contract for student’s Graduate Nursing Office file
These courses are a series of practicum courses, one course taken, as appropriate, each semester that the student is designated as a Research Scholar. Designation as a Research Scholar is linked to specific graduate student awards and specific stages of the research process. During this practicum course the student actively participates in selected aspects of a research project with a faculty mentor.

NURE 5006 Mentored Research Practicum: Research Results/Policy
1.0–2.0 Variable Semester Credit Hours
Prerequisites: receipt of a research scholar award; concurrent enrollment in NURE 5115; submit a completed, signed student/faculty mentor contract for student’s Graduate Nursing Office file
These courses are a series of practicum courses, one course taken, as appropriate, each semester that the student is designated as a
NURE 5340  FNP: Expanded Scope of Practice for WHNP 3.0 Semester Credit Hours
Prerequisites: completion of the Women’s Health Care Nurse Practitioner Program at UT Southwestern Medical Center at Dallas, 1995 or later
This course is designed specifically for the Women’s Health Nurse Practitioner who is broadening her/his scope of practice to encompass the role of the Family Nurse Practitioner. Selected topics in primary care, primarily focused on clinical and laboratory assessment, management of selected primary care conditions of men and children, and the FNP role will be addressed. Portions of the course are designed for independent study using Web-based and distance technologies.

NURE 5344  Psychiatric Nursing of Children and Adolescents 3.0 Semester Credit Hours
Prerequisites: Generic: NURS 3522; Flexible: NURS 3624; Graduate: none
This course is designed to provide the student with an overview of the field of psychiatric and mental health nursing of children and adolescents. The emphasis of the course is placed on the various psychopathologies, as well as the currently suggested treatment approaches and nursing interventions in working with disturbed children and adolescents. The etiologies and perpetuation of child and adolescent psychopathologies will be explored. The nurse’s role in the prevention of mental disorders in children and adolescents will be identified. A review of current thinking in terms of family assessment and family intervention will be a significant component of the course. Collaborative work is part of the course teaching method.

NURE 5351  Nursing Management of Dysrhythmias 3.0 Semester Credit Hours
Prerequisites: Generic: completion of Semester II; Flex: admission to program; Graduate: admission to program/course open to Continuing Education participants
The emphasis of this course is on the electrophysiologic basis of cardiac dysrhythmias, their management, and the nursing responsibilities associated with each type of dysrhythmia. The course is designed to increase the student’s understanding of electrocardiography (EKG) gradually, beginning with information on the anatomy and physiology of the heart, electrophysiology, normal electrical activation of the heart, and mechanisms of dysrhythmias. Throughout the course, nursing responsibilities regarding EKG interpretation and nursing intervention pertinent to specific dysrhythmias will be stressed, incorporating the nursing process.

NURE 5314  Nursing Interventions in Pain 3.0 Semester Credit Hours
This course is a survey and analysis of current theories about pain and its alleviation. The exploration of nurses’ role in pain management is included.
Clock hours: three class hours per week.

NURE 5115, Application of Research in Nursing 5215, 5315
1.0–3.0 Semester Credit Hours
A list is provided each academic semester citing faculty and their research projects with whom graduate students may contract for this elective course.

NURE 5334  Nursing Care of the Patient in Crisis in the Emergency Department 3.0 Semester Credit Hours
This course is designed to explore various theories, concepts, and research in the nursing care of the patient in crisis within the Emergency Department. A holistic approach will be taken utilizing nursing process. The focus will be upon individualization of the nursing process in the care of the patient in the Emergency Department. Continuity of care will be emphasized from admissions to stabilization, transfer, discharge and/or clinical follow-up.
Clock hours: one and one-half class hours and four and one-half practicum hours per week

NURE 5152/5153 or NURE 5252  Social and Moral Values in the Health Professions
NURE 5152/5153 — 1.0 Semester Credit Hour = 1 class hour
NURE 5252 — 2.0 Semester Credit Hours = 2 class hours
This interdisciplinary course focuses on current bioethical issues and dilemmas encountered in the delivery of services by health professionals. The sequence of topics, taught by an interdisciplinary team of faculty members and guest speakers, spans the entire academic year. The first classes will have the opportunity to develop a philosophical framework for ethical decision making. Subsequent sessions will offer an opportunity to utilize this framework in the analysis of selected current ethical issues such as euthanasia, ethics of research, abortion, allocation of scarce resources, and reproductive technology. Each class consists of a presentation of an ethical issue followed by class discussion. This course is open to nursing students enrolled in the undergraduate, graduate, or flexible process. This course may be taken in either the fall or spring semester for one or two hours of credit. Students may register for two hours of credit (NURE 3252/5252) only once, but may do so in either the fall or spring semester.
Clock hours: one class hour or two class hours per week
NURE 5362 Ethical Legal Aspects in Nursing and Health Care
3.0 Semester Credit Hours
This course introduces the student to contemporary bioethical and legal issues confronting nurses who provide care in a variety of settings. The major focus of the course will be on ethical decision making and the contemporary nursing practice.
Clock hours: three class hours per week

NURE 5367 Hispanic Health Concerns: A Nursing Perspective
3.0 Semester Credit Hours
Prerequisite: NURS 3811 or graduate standing
This course is designed to provide the student with a comprehensive, in-depth view of topics and issues influencing the health of the Hispanic population in order to enhance the cultural sensitivity of the health care provider. An overview of the characteristics of the Hispanic population is given as well as data in relation to lifestyle, major health concerns, and research findings on Hispanic health across the life cycle. The use of folk practices, herbal medicine, and utilization of the health care delivery system and its implications to nursing practice is addressed. The role of the nurse in disease prevention is explored within the framework of the life cycle. Nursing interventions to overcome language barriers are provided including sources for Spanish language, culturally relevant publications.
Clock hours: three class hours per week

NURE 5373 Instructional Media
3.0 Semester Credit Hours
This course is designed to assist students in attaining an overview of the use of instructional media in nursing; in education, administration, research, professional activities, and patient teaching. It also will provide opportunities for the student to develop abilities in creating and using mediated materials and audiovisual equipment in these settings.
Clock hours: three class hours per week; Computer lab fee: $15

NURE 5090 Topics of Special Interest in Nursing: Selected Topics: Introduction to Nursing and Health Care Informatics in Nursing
3.0 Semester Credit Hours
Prerequisite: graduate standing or permission of the instructor
This course introduces the student to computer terminology, processing systems, and their use in health care operations for management control, planning, and efficiency and clinical information systems for patient care in the inpatient and outpatient settings. This will include management information systems, decision support systems, knowledge systems, and the planning and implementation process for an integrated health care information system. It will also introduce the components of software/hardware selection and implementation strategies.
Clock hours: three class hours per week; Computer lab fee: $15

NURE 5090 Topics of Special Interest in Nursing: Anthropological Perspectives on Nursing and Health
3.0 Semester Credit Hours
Prerequisite: graduate standing
The course will be taught as a seminar, and will offer a review of concepts and methods of anthropology as they have been applied to problems of nursing and health. A major focus will be how anthropologists have investigated and analyzed health-related behaviors. This information will then be related to nursing science and practice, to see how the anthropological perspective can offer solutions or new approaches. Topics will include cultural variation in illness beliefs and illness behavior, types of healing practices, international health, the culture of health care, and narrative representations of illness and healing.

NURE 5091 Independent Study in Nursing
1.0–4.0 Semester Credit Hours
Prerequisites: graduate standing and consent of instructor
This elective allows for detailed or in-depth study in a specific topic area. Topic and mode of study are agreed upon by student and instructor. The course may be repeated for credit when topics vary.
Clock hours to be arranged.

NURE 5110 Interdisciplinary Team Approach to Pain Management
1.0 Semester Credit Hour
Prerequisites: open to students enrolled in nursing, dental, medical, occupational and physical therapy schools, and the clinical pharmacy program; OT 4; MPT 1–3; PharmD; DS 3&4; MS 1–4; NS 2, 3, & 4; and Graduate
This course provides an overview of current concepts and management of pain from a clinical interdisciplinary health care team perspective. The content includes the classification, characteristics, and assessment of pain and interventions for pain control (pharmacologic, invasive, cognitive, and physical). Emphasis will be placed on respecting the contribution of each member of the health care team through student involvement in case studies. The faculty and student body will be multidisciplinary representing Allied Health (Occupational Therapy and Physical Therapy), Dentistry, Medicine, Nursing, and the Clinical Pharmacy programs.
Doctor of Philosophy Program

Objectives
The objectives of the doctoral program are designed to provide the student the opportunity to:
1. Advance the discipline of nursing through the generation of new knowledge and theory.
2. Demonstrate excellence as a clinical researcher in the health sciences in a focal area of nursing.
3. Synthesize theories from natural and/or behavioral sciences for application to a specified area of nursing.
4. Advance clinical practice through research utilization.
5. Assume nurse scientist roles within academic health centers and other interdisciplinary health sciences and educational institutions.
6. Evaluate the value and knowledge components of philosophical and ethical dimensions of issues confronting health care and nursing.

Collaboration
The PhD in nursing program is offered by The University of Texas Health Science Center at San Antonio School of Nursing (UTHSCSASN). The PhD degree is awarded by The University of Texas Health Science Center at San Antonio Graduate School of Biomedical Sciences.

Off-campus Course Offerings
Selected doctoral courses also are available on the campus of Texas A&M University-Corpus Christi and The University of Texas Pan American, Edinburg.

Degree Requirements
Full-time and part-time study options are available. Part-time study for doctoral students is defined as six credit hours or two courses per semester.

Students entering the program post-BSN have a total maximum enrollment time of seven years. Post-MSN students have a five year total maximum enrollment for acquiring the PhD degree.

All students will be required to complete a qualifying exam. The qualifying examination, which is completed near the end or following the completion of coursework, determines continuation in the program.

Any PhD student must be enrolled in a minimum of one (1) semester hour of course work at UTHSCSA in order to be enrolled in the PhD program of study. If the student is not enrolled, the student must take a Leave Of Absence (LOA) or withdraw from the program. Coursework taken more than six years prior to the end of the candidate's final semester may not be accepted for credit and, if necessary for the PhD degree, must be repeated or specifically approved by the Committee on Graduate Studies.

All policies of the Graduate School of Biomedical Sciences are applicable to this program of study.

Curriculum
A minimum of 80 semester credit hours of graduate courses is required for the Doctor of Philosophy degree. The MSN-prepared applicant will be given advanced placement dependent upon an evaluation of master's-level courses. Support courses may be taken outside the School of Nursing.

<table>
<thead>
<tr>
<th>Minimum Semester Credit Hours</th>
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<tbody>
<tr>
<td>Theory/Research/Science</td>
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<tr>
<td>NURE 5115 Application of Research in Nursing</td>
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<tr>
<td>NURS 6374 Nursing - Content &amp; Practice: Quantitative Research Methodology I</td>
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<tr>
<td>NURS 6475 Nursing - Content &amp; Practice: Quantitative Research Methodology II</td>
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<tr>
<td>NURS 7296 Nursing - Clinical Research Applications Evaluation in Nursing</td>
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<tr>
<td>NURS 7310 Theory Development, Analysis, and Qualitative Inquiry for Clinical Nursing Research</td>
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<td>NURS 7480</td>
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<tr>
<td>Total: 23.0</td>
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<tr>
<td>Clinical Practice</td>
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<tr>
<td>NURS 7490 Nursing Seminar &amp; Mentorship for Role Integration</td>
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<tr>
<td>Total: 13.0</td>
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<tr>
<td>Professional/Socialization</td>
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<tr>
<td>NURS 6071 Supervised Teaching</td>
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<tr>
<td>NURS 6221 Nursing - Health Care Policy and Trends</td>
</tr>
<tr>
<td>NURS 6225 Nursing - Philosophy and Ethics in the Health Sciences</td>
</tr>
<tr>
<td>NURS 7376 Nursing - Advanced Professional Seminar and Practicum</td>
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<td>Total: 12.0</td>
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<tr>
<td>Support Courses</td>
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<tr>
<td>Non-Nursing Cognates/Depth in Discipline</td>
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<tr>
<td>Total: 11.0</td>
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<tr>
<td>Electives</td>
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<tr>
<td>Dissertation</td>
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<tr>
<td>NURS 7099 Dissertation (Maximum credit)</td>
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<tr>
<td>Program Total: 80.0</td>
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Doctoral Course Descriptions
NURS 6071 Supervised Teaching
1.0–6.0 Semester Credit Hours
Directed teaching in the major area under close supervision of one or more faculty members is required of each doctoral student. Up to six semester credit hours toward a degree may be granted to the
student who satisfactorily completes the graduate courses in Supervised Teaching in her/his area of study.

**NURS 6221  Nursing - Health Care Policy and Trends**  
**2.0 Semester Credit Hours**  
Prerequisites: study of advanced professional elements and issues; role(s) socialization  
The focus of this course is health policy development and implementation and the role of the health sciences in influencing policy. The social, political, business, health delivery, science, fiscal, and other factors influencing health policy will be addressed. Health policy is analyzed relative to cost/benefit and/or cost/effectiveness analysis. Emphasis is on the effects of health policy on health care programs, programs of research, priorities in health care, and funding sources. The course is open to graduate students in other disciplines, with permission.  
Clock hours: two class hours per week

**NURS 6225 Nursing - Philosophy and Ethics in the Health Sciences**  
**2.0 Semester Credit Hours**  
Prerequisites: study of advanced professional elements and issues; role(s) socialization  
The focus of this course is on articulating the differences in models of knowing and on analyzing the role of science and scientists in society. Emphasis is on the process of analysis, the ability to present the pros and cons of current and anticipated ethical issues, influencing specific clinical situations, and on development and use of technologies in health care.  
Clock hours: four seminar hours per week

**NURS 6374 Nursing - Content and Practice: Quantitative Research Methodology I**  
**3.0 Semester Credit Hours**  
Prerequisite: NURS 7490  
Integration of the research process and qualitative and quantitative analysis including concept mapping, operationalization of concepts, and appropriate statistical treatments make up the content of this course. The course will incorporate identifying clinical research questions and developing study proposals for such questions.  
Clock hours: three class hours

**NURS 6475 Nursing - Content and Practice: Quantitative Research Methodology II**  
**4.0 Semester Credit Hours**  
Prerequisites: NURS 6374, computers/applications in health sciences, and multivariate statistical course  
Research designs, measurement theory, and statistical approaches will be the focus of this course. The advantages and disadvantages of different designs using techniques of multivariate analyses with regard to the conceptualization and measurement of nursing phenomena, concept mapping, and phases of operationalization will be examined. Approaches to assessment of reliability and validity relative to nursing instruments and the research process will be included.  
Clock hours: four class hours per week

**NURS 7296 Nursing - Clinical Research Applications**  
**2.0 Semester Credit Hours**  
Prerequisites: doctoral student; 9.0 semester credit hours of study of advanced direct patient care; NURS 6475; should be last semester of coursework, to include all cognates  
This course provides guided study in the proposal generating process. Students will apply the knowledge gained in the prerequisite research courses and their clinical expertise to develop their dissertation proposal. Faculty representing each content area and experts in methods needed will be participants in the seminar. Individual guidance will be provided to students throughout the course.  
Clock hours: four seminar hours

**NURS 7376 Nursing - Advanced Professional Seminar and Practicum**  
**3.0 Semester Credit Hours**  
Prerequisites: Doctoral student in good standing, 9.0 semester hours of study of advance direct patient care, and NURS 6374  
This course consists of seminar and practicum on the topic of gaining financial support for research and/or demonstration projects in nursing and health care related areas. Students are given the opportunity to analyze the funding criteria of various agencies and techniques of strategic communication. Students are given the opportunity to project budget development and packaging of ideas as information basic to creating successful proposals. Using a research or demonstration project with which he/she is familiar, the student is given an opportunity to create a funding proposal and participate in critiques of colleagues’ proposals.  
Clock hours: four seminar hours and three practicum hours per week

**NURS 7480 Qualitative Inquiry for Clinical Nursing Research**  
**4.0 Semester Credit Hours**  
Prerequisite: master level theory/research  
This course will include an overview of a variety of qualitative theoretical approaches: ethnomethodology, symbolic interaction, hermeneutics, phenomenology, cultural, feminist, critical, grounded, and historical. The student will have the opportunity and be required to initiate qualitative research design, apply methodology for collecting and interpreting data, and utilize criteria for evaluating qualitative research reports.

**NURS 7490 Nursing - Seminar and Mentorship for Role Integration**  
**4.0 Semester Credit Hours**  
Prerequisites: doctoral student and 9.0 semester credit hours of study of advanced direct patient care  
This course integrates the dynamic elements of practice, theory, and research to explore the roles of the doctorally-prepared nurse in the health sciences arena. Included is the identification of facilitators for and barriers to the implementation of the role in health science settings and strategies involved in developing collaborative research and practice opportunities. Faculty will include invited experts and mentors who function in these roles.  
Clock hours: three class hours and three practicum hours per week
Dissertation

NURE 7090  The Dissertation Proposal Process in Nursing
1.0–3.0 Semester Credit Hours
Prerequisites: successful completion of the written and oral qualifying examinations
This elective course provides an opportunity for doctoral candidates to work closely with their dissertation committee to develop the dissertation proposal and proceed through the Graduate Faculty Council approval process.

NURS 7099  Dissertation
Semester Credit Hours to be Arranged
Prerequisites: admission to candidacy for Doctor of Philosophy degree; registration for two terms is required of PhD candidates.

Grades and Progression — (MSN and PhD)

Grades and Grade Point Average
The standing of students in their work is expressed by five grades: A (above average graduate work), B (average graduate work), C (below average graduate work), D (failing graduate work), and F (failing graduate work). D and F grades are not acceptable for graduate credit.
Other symbols used in reporting the standing of students in their classes are: S=satisfactory; U=unsatisfactory; Q=course dropped, no penalty; WP=withdrawal from course passing; WF=withdrawal from course failing; I=incomplete; IP=in progress (thesis/dissertation courses only). AU records an audited course.
Courses in which a student receives a D or F will not be counted toward the total number of courses and/or hours required for a graduate degree in the Graduate School of Biomedical Sciences. However, all grades (A to F) are included in the computation of the grade point average. In computing the grade point average, the following scale of points per semester credit hour is used:

- A = 4 points  (90–100)
- B = 3 points  (80–89)
- C = 2 points  (70–79)
- D = 1 point  (60–69)
- F = 0 points  (Below 60)

Repetition of a Course
Credit for courses in which a D or F is received may be obtained only by repetition of the course. If a course is repeated, only the second grade will be used in calculating the cumulative grade point average. Courses which the student completes with a C or higher cannot be repeated. No course can be repeated more than one time.

Incomplete
With the permission of the course instructor, an Incomplete (I) may be recorded if a student has not completed all assignments before the conclusion of the course. Prior to the recording of an Incomplete (I), a written agreement must be signed by the instructor and student designating a specified time period (initially, 3 months and not to exceed one year total) in which the I will be removed. Should the student fail to meet the terms of the agreement, the grade will be changed to an F. Registration in a sequential course requires that an Incomplete be removed.

Satisfactory-Unsatisfactory Computations
Courses selected as electives by students may be taken on a Satisfactory-Unsatisfactory basis, with the permission of the instructor. If the course taken on this basis is passed, the symbol S will be recorded on the transcript; if unsatisfactory, the symbol U is recorded. S or U grades are not included in the computation of the grade point average.

Thesis and Dissertation Course Reporting
Thesis and dissertation courses will be reported as In Progress (IP) until the work is completed, at which time they will be reported as Satisfactory or Unsatisfactory. Thesis and dissertation courses are not counted in the grade point average.

Auditing
Nursing graduate students may audit nonclinical courses taught by the Nursing faculty with the approval of the instructor and the Associate Dean for Graduate Nursing Program providing there is space available after registered students have been accommodated. It is the instructor’s prerogative to stipulate expectations of attendance or assignments for auditors. Audited courses will be recorded on the transcript as audited (AU). No audited course may be taken subsequently for credit. There is a fee for audited courses.

Continuing Education Participation
Individuals not enrolled in graduate study may audit courses as Continuing Education (CE) participants. The policies for this option are the same as for audited courses, except for recording on the transcript and the fee. The fee for CE participation will be $25. CEUs will be awarded upon completion of the audited course. Registration for CE participation is through the School of Nursing Office of Continuing Education.

Examinations
Examinations must be taken on the date and time scheduled. If extenuating circumstances prevent the student from taking an examination, prior approval must be granted by the course instructor to postpone the examination. If a student misses an examination without prior approval by the instructor, a grade of F will be recorded for the examination.

Semester Reports
Grade reports are sent to all students at the end of each semester.

Progression in the Graduate Program
To continue in the graduate program, a student must:

a. absolve any contingencies related to admission to the program within the time period stated in the letter of admission, or within the first semester if not stated;
b. maintain satisfactory progress (B average in first 9 hours) if conditionally admitted;  
c. receive no more than one C in clinical major courses;  
d. maintain a minimum cumulative grade point average of B (3.0) for all courses taken while enrolled in the graduate program; and  
e. maintain a minimum cumulative grade point average of B (3.0) for all nursing courses taken while enrolled in the graduate program.

Should a student fail to meet criteria, a, b, or c for continuance in the program, her/his progress will be reviewed by the Committee on Graduate Studies which may:  
a. impose conditions as requirements for continuation in the program, or  
b. terminate the student’s enrollment in the program, with the consent of the Dean of the Graduate School of Biomedical Sciences.

Readmission

Individuals who have previously been enrolled in graduate nursing courses should complete an application for readmission. Transcripts from any colleges or universities attended since the time of the previous enrollment in the master’s program must be submitted. Applicants may be requested to provide recent professional references. Proof of current licensure as a registered nurse in Texas is also required.

Individuals who have not registered in two consecutive terms must apply for readmission unless they were previously granted official permission for leave of absence.

Those seeking readmission are subject to all requirements, procedures, and acceptance considerations outlined in this Catalog.

General Policies for Graduate Nursing Program

Full-Time Student Status

Full-time student status in the Master of Science in Nursing program is nine (9) semester hours of coursework in a regular semester, or two sessions of one summer, or enrollment in one semester hour of seminar for the Family Nurse Practitioner clinical major (NURS 6106). The seminar necessitates that students engage in a preceptorship (which has a minimum requirement of 27 hours per week).

Uniforms

Graduate students are responsible for purchasing uniforms and laboratory coats. Name badges are issued by the Office of Student Services. Laboratory coats may be purchased from the Health Science Center Bookstore.

Change of Address

If a student’s home or campus address changes after registration, that student is expected to notify the Office of Student Services and the Office of the Graduate Nursing Program. Students will be held responsible for any communication from school offices sent to them at the address last given.

Teaching Assistants

Opportunities are available for graduate nursing students enrolled part-time to work as teaching assistants in the School of Nursing Learning Laboratory. Teaching assistants work with undergraduate students, assisting them to learn technical skills. Interested applicants should contact the School of Nursing for additional information.

Transfer of Credit

Academic work for the Master of Science in Nursing is usually completed within The University of Texas Health Science Center at San Antonio. However, students may, with the approval of their advisors, transfer from another accredited institution a maximum of six semester credit hours (9 quarter hours) of graduate elective credit applicable to a course of study leading toward the Master of Science in Nursing degree. Additional graduate courses may be transferred from other accredited institutions upon the approval of the Committee on Graduate Studies, with the number not to exceed an additional six semester credit hours. The doctoral program provides special opportunities for an increased number of hours of transfer credit.

Approval of transfer credit requires that the student be enrolled in the graduate program. The student must complete a Request for Transfer of Credit form and submit it to her/his advisor with an official course description from the catalog and must ascertain that an official transcript, sent directly from the college or university attended, is in her/his file or request that a transcript be sent as soon as the course is completed. All courses must have been completed not more than five years before the degree is awarded. Courses in which a grade of C or less has been earned will not be accepted for transfer.

Upper-Division Coursework

The maximum number of credit hours of upper-division level coursework which may be included is three, and such undergraduate coursework must be completed within the School of Nursing. This coursework is for elective credit only.

Correspondence Courses

Courses completed by correspondence are not accepted for graduate credit.

Residence

Each degree candidate must complete two semesters of full-time study, or the part-time equivalent, in residence at The University of Texas Health Science Center at San Antonio. No student may receive advice and assistance from a member of the faculty in the preparation of the thesis or dissertation without being registered (if necessary for multiple semesters) for the thesis/dissertation course.
Scholastic Probation
A student whose cumulative grade point average or nursing grade point average falls below 3.0 will be placed on probation and warned that continuation in the graduate program is in jeopardy.

The probation period shall extend no longer than two consecutive semesters of enrollment. No more than one probationary period shall be permitted. NURE (elective) courses may not be taken during the probationary period, and the student may not drop any course after the first class day.

To be removed from probation, the student must achieve a 3.0 cumulative grade point average by the completion of the probationary period. Failure to accomplish the required average will result in the student’s dismissal from the program.

The progress of students on probation will be reviewed by the Committee on Graduate Studies each semester. A student on probation will not be admitted to candidacy nor awarded a degree. Satisfactory progress toward the degree is required throughout the student’s enrollment. The Committee on Graduate Studies may terminate a student’s enrollment at any time if the student does not meet the criteria for continuance in the program.

Adding Courses
After registration, during the first four days of any semester or the first two class days of any summer session, a student may add a course with the approval of the instructor and the Associate Dean for Graduate Nursing Program. After the add-course card has been completed, it must be submitted to the Registrar for recomputation of tuition and fees.

Dropping Courses
Dropping refers to the procedure by which students remove themselves from one or more of the courses in which they are enrolled while continuing in the remainder of their courses. A student who is enrolled in only one course must either withdraw or apply for a leave of absence if he/she intends to drop the course.

Students may, with the approval of the faculty and the Associate Dean for Graduate Nursing Program, drop a course before the first examination/graded assignment without having a grade recorded on the transcript. The symbol Q will be recorded and the grade computation will not be affected.

With the approval of the instructor and the Associate Dean for Graduate Nursing Program, a student may drop a course at any time before the last official class day in the semester if a passing grade has been maintained. The symbol WP will be recorded. Courses dropped by a student who has not maintained a passing grade will be noted on the transcript with the symbol WF. A student may not drop a course if all assignments have been submitted to the faculty for grading, nor may a student drop a course for which an Incomplete (I) has been assigned.

Withdrawal
Permission for withdrawal from the Graduate Program in Nursing may be granted by the Associate Dean for Graduate Nursing Program on written request by the student, and after consultation with the student’s faculty advisor. In the case of withdrawal before the end of the semester or the summer session (and thus the dropping of all courses), the grading symbol WP or WF will be recorded for each course not completed, depending on the student’s standing on the last day of enrollment.

In the case of withdrawal at the end of a semester or summer session, the appropriate grading symbol, A through F, will be recorded for each completed course and WP or WF for each course not completed. The student must meet with the Associate Dean for Graduate Nursing Program to initiate the withdrawal process. Any student who withdraws at any time must complete a Student Clearance Form at the time of withdrawal. A student who discontinues class attendance in any course without completing formal drop or withdrawal procedures shall receive a grade of WF for the course. An application for readmission by a student who has previously withdrawn is subject to the same requirements, procedures, and acceptance considerations that apply to first-time applicants.

Completion of Clinical Preceptorship
Clinical preceptorships, whether elective or required for the clinical major, must be completed no later than one (1) calendar year following the completion of all other courses in the masters or post-masters program of study. Students who are granted approved leave of absence (LOA) during their final semester have two additional terms (summer, fall, or spring semesters), following return from LOA, in which to enroll in and to complete the preceptorship.

Leave of Absence
Permission for a leave of absence from the Graduate Program in Nursing for a maximum period of one year may be granted upon written application of the student. To be eligible to request a leave of absence, a student must have maintained a 3.0 grade point average, must have resolved all grades of Incomplete (I), and must not have dropped any course(s) with a WF. The student must meet with the Associate Dean for Graduate Nursing Program to initiate the Leave of Absence process. A leave of absence indicates that the student will be permitted to reenroll within a one-year time limit. Students who do not return within the time limit must apply for readmission.

Student Responsibility
Students are held responsible for knowing degree requirements and for enrolling in courses that fit their degree programs. Students are likewise held responsible for knowing the Graduate School and Nursing program regulations with regard to the standard of work required for continuance in the graduate programs. Additional information should be obtained from the graduate advisor.
Deferred Enrollment
Each applicant accepted to the graduate program is admitted for a specific semester. If an applicant chooses to defer enrollment to a subsequent semester, he/she must be reconsidered for admission. The applicant must submit a written request indicating intent to defer and specify the desired semester for enrollment. Admission in a subsequent semester cannot be assured.

Professional Liability Insurance
All students enrolling in nursing courses will be required to show evidence of professional liability insurance coverage in at least a minimum amount of $1,000,000 limit each claim and $3,000,000 limit aggregate in order to complete registration. Such insurance must be purchased through the University at the time of registration. Coverage is required from the student’s first day of class throughout her or his program of study. Liability insurance purchased through the University is applicable to the student role only. Nurse practitioner students are required to pay an additional insurance fee. (See “Financial Information” in this Catalog.)
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