

## Health Professions Academic Preparation

### PHARMACY

An undergraduate education provides students with the opportunity to grow personally and intellectually; allowing them the time and resources to discover a breadth of new ideas and topics as well as to build and to explore in depth their own interests and passions. Therefore, students should seek a broad education during their undergraduate years. There is no required major for entrance to Pharmacy school. **The following courses represent what can be taken at UTSA to fulfill the entrance requirements for The University of Texas at Austin College of Pharmacy for the Doctor of Pharmacy (Pharm. D.) program**, the majority of which should be completed for a letter grade. Please note that all requirements are subject to approval by UT Austin College of Pharmacy and are subject to change. Further, because there is some variation in requirements for other pharmacy schools, students are advised to consult individual programs for their specific and most current information. Supplemental worksheets that detail pre-pharmacy coursework from some other institutions in Texas may also be available upon request in the University Health Professions Office (UHPO).

Required Areas of Study	UTSA Courses	Grade/Sem	Prerequisites/ Corequisites
English Composition (3 hrs lecture)	WRC 1013		
Literature (3 hrs lecture)  <i>NOTE: Other literature courses may be considered on an individual basis.</i>	ENG 2013, ENG 2223, ENG 2233, ENG 2262, ENG 2423, CLA 2033, CLA 2323, CSH 1103, CSH 1113, IDS 2303, or IDS 2313		WRC 1013 and WRC 1023
American History (6 hrs lecture)	HIS 1043, HIS 1053, or HIS 2053 HIS 1043, HIS 1053, or HIS 2053		
American Government (6 hrs lecture)	POL 1013 POL 1133 or POL 1213		
Foreign Language (6 hrs lecture)  <i>NOTE: Two years high school coursework or placement exam for native speakers also acceptable.</i>	Two semesters of any single foreign language		
Calculus (3 hrs lecture)  <i>NOTES: Calculus for business is not acceptable.</i>  <i>MAT 1193 was formerly MAT 1194; MAT 1224 was formerly MAT 1223.</i>	MAT 1193 or MAT 1214 and MAT 1224		MAT 1093 or satisfactory score on a placement exam

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Statistics (3 hrs lecture)	<sup>1</sup> STA 1053, <sup>2</sup> PSY 2073, or higher		<sup>1</sup> Satisfactory score on a placement exam; <sup>2</sup> MAT 1073 and PSY 1013
General Chemistry (6 hrs lecture; 2 hrs lab)  <i>NOTE: Although UTSA chemistry labs are worth two hours of credit each, the UT Austin College of Pharmacy requires that students take matching labs to both General Chemistry I and II.</i>	<sup>1</sup> CHE 1103 or <sup>2</sup> CHE 1143		<sup>1</sup> Passing grade on Chemistry Placement Exam or C or better in CHE 1073 and completion of or concurrent enrollment in MAT 1073; <sup>2</sup> Grade of "B" or higher in MAT 1073 and CHE 1073 or score of 60% or higher on chemistry placement exam
	CHE 1122 Lab and CHE 1120 Lab Lecture		Completion of or concurrent enrollment in CHE 1103 or CHE 1143
	<sup>1</sup> CHE 1113 or <sup>2</sup> CHE 1153		<sup>1</sup> CHE 1103; <sup>2</sup> "C" or better in CHE 1143 or "B" or better in CHE 1103 with instructor consent
	CHE 1132 Lab and CHE 1130 Lab Lecture		Completion of or concurrent enrollment in CHE 1113 or CHE 1153
Organic Chemistry (6 hrs lecture; 2 hrs lab)  <i>NOTES: Although UTSA chemistry labs are worth two hours of credit each, the UT Austin College of Pharmacy requires that students take matching labs to both Organic Chemistry I and II.</i>  <i>CHE 2603 was formerly CHE 2604; CHE 3643 was formerly CHE 2623; CHE 3652 was formerly CHE 2632; CHE 3650 was formerly CHE 2630.</i>	CHE 2603		CHE 1113 or CHE 1153 and CHE 1132
	CHE 2612 Lab and CHE 2610 Lab Lecture		Completion of or concurrent enrollment in CHE 2603
	CHE 3643		CHE 2603 and CHE 2612
	CHE 3652 Lab and CHE 3650 Lab Lecture		CHE 2603 and CHE 2612
Physics (3 hrs lecture; 1 hr lab)  <i>NOTE: Some pharmacy schools may require that students take a calculus-based version of physics. Students are recommended to consult their schools of interest for more information before taking algebra-based physics.</i>	<sup>1</sup> PHY 1603 or <sup>2</sup> PHY 1943		<sup>1</sup> MAT 1023 (not recommended for pre-pharmacy students), MAT 1073 or consent of instructor; <sup>2</sup> MAT 1193 or MAT 1214 with completion of or concurrent enrollment in MAT 1224 (if MAT 1214 taken) or STA 1404 (if MAT 1193 taken)
	<sup>1</sup> PHY 1611 Lab or <sup>2</sup> PHY 1951 Lab		<sup>1</sup> Completion of or concurrent enrollment in PHY 1603; <sup>2</sup> completion of or concurrent enrollment in PHY 1943
<i>Continued on reverse</i>			

Biology (12 hrs lecture; 1 hr of general biology lab and 1 hr of microbiology lab)	BIO 1404		MAT 1023 (not recommended for pre-pharm students) or MAT 1073; CHE 1073 or higher also <i>recommended by UHPO</i>
	BIO 1122 Lab		Completion of or concurrent enrollment in BIO 1404
	BIO 1413		BIO 1404
	BIO 2313 Genetics		BIO 1413 and completion of or concurrent enrollment in CHE 1103 and MAT 1193 or STA 1053 (STA 1404 for Biology majors)
	BIO 3713 Microbiology		BIO 1413 and BIO 1122
	BIO 3722 Microbiology Lab		BIO 1413 and BIO 1122

*Please note that the previously listed UTSA courses and prerequisites are for students following the 2010-2012 Undergraduate Catalog. Students following another undergraduate catalog should consult an advisor with any questions about course numbering.*

**Foundation Courses:** For students who are not prepared to go directly into the required courses, it will be necessary to enroll first in foundational courses, such as basic chemistry and an appropriate mathematics course. It may also be necessary to take the mathematics and chemistry placement tests to determine proficiency. For additional information, consult an advisor early in your studies.

**Advanced Biology Electives Relevant to Pharmacy Education:** The following subjects in biology have relevance to health professions education. Thus, taking courses such as those below during your pre-pharmacy preparation is recommended.

BIO 3013 Introduction to Clinical Medicine  
 BIO 3163 Histology & Cytology  
 BIO 3433 Neurobiology  
 BIO 3663 Human Embryology  
 BIO 3813 Cellular Biology  
 BIO 4143 Developmental Biology  
 BIO 4743 Immunology

BIO 3123 Comparative Vertebrate Anatomy  
 BIO 3413 Advanced Physiology  
 BIO 3623 Neuropsychopharmacology  
 BIO 3713 Microbiology  
 BIO 3913 Molecular Biology  
 BIO 4453 Endocrinology

**Additional Elective Courses to Consider:** Health professions education is placing a greater emphasis upon coursework in the social and behavioral sciences. Thus, an understanding of the broader contexts within which medicine and health education is practiced on an everyday basis can be beneficial to students.

- ANT 3523 Medical Anthropology
- COU 3103 Helping Skills
- HIS 3453 History of Medicine in America
- HTH 4503 Human Disease and Epidemiology
- HTH 4533 Nutrition and Health
- MGT 4953 Introduction to Healthcare Management
- PSY 4253 Psychology and Health
- SOC 3213 Medical Sociology

- SPN 2513 Spanish for Health Careers

**Timeline:** Students who enter their undergraduate studies with the intention of pursuing pharmacy studies just after graduation should plan to complete the pre-pharmacy course work by the end of their junior year. It is not unusual, though, that a student will decide later in their academic career to pursue pharmacy. Arriving at the decision later does not necessarily place a student at a disadvantage. It will, however, require a student to postpone the application to pharmacy school until pre-pharmacy course requirements are fulfilled. Since the pharmacy school application process takes approximately nine months, planning is essential.

**Application Process:** There are currently six pharmacy schools in Texas: the University of Houston College of Pharmacy, the Texas A&M Health Science Center Irma Lerma Rangel College of Pharmacy in Kingsville, the University of the Incarnate Word (UIW) John and Rita Feik School of Pharmacy, the Texas Southern University College of Pharmacy and Health Sciences, the Texas Tech University Health Science Center School of Pharmacy in Amarillo, and the University of Texas at Austin College of Pharmacy. There is no centralized service for through which one could apply to all of the schools in Texas. Students should be aware that each school has its own deadlines and procedures for applying in order to plan accordingly.

To apply to the UIW Feik School of Pharmacy as well as many out-of-state pharmacy schools, students should utilize the Pharmacy College Application Service (PharmCAS). Detailed information on the application process can be found at their website: [www.pharmacas.org](http://www.pharmacas.org). It is the student's responsibility to ensure that each School of Pharmacy or the PharmCAS receives all transcripts, fees, and other required documentation. To better serve future students, we will be establishing a longitudinal database, in which to keep track of our applicants and where they have matriculated. To facilitate this, we request that students approve access through PharmCAS for our advisors to view their application status ("Release of Information to Health Professions Advisors").

**PCAT:** The Pharmacy College Admissions Test (PCAT) is a standardized exam required by all schools and colleges of Pharmacy for admission. This test is only given a few times a year. The PCAT is comprised of six sections: Verbal Ability, Biology, Reading Comprehension, Quantitative Ability, Chemistry, and Writing. Test takers may earn a scaled score of 200-600 as well as a percentile score for each of the five multiple choice subtests and a scaled score of 0-5 on the writing subtest. Beginning in 2010, a PCAT Computer-Based Test will be piloted. For further information, including on registration and practice tests, visit the PCAT website at [www.PCATweb.info](http://www.PCATweb.info).

**Community Service/Volunteering/Shadowing:** An integral part of preparation for pharmacy school entails involvement in community service projects and volunteer work or other experience in hospital, clinical or commercial pharmacy settings. These activities serve to familiarize prospective pharmacists with the realities of everyday practice as well as to underscore the role of medicine and pharmacy in relation to broader community level concerns and issues. A list of volunteer opportunities is available on the UHPO website ([www.utsa.edu/healthprofessions](http://www.utsa.edu/healthprofessions)). We do not, however, have a list available for shadowing or work experiences. Students must exercise personal initiative and develop relationships that would allow them to have this direct contact with a pharmacist in everyday practice.

**Letters of Evaluation:** Letters of evaluation are an essential part of the application to pharmacy school. Some pharmacy schools have specific forms they would like referees to fill out while others will prefer narrative letters. Because selection committees depend heavily on evaluation letters to gain insight into applicants' personal strengths, weaknesses, and accomplishments, students should be sure to request letters of evaluation from individuals, including professors and work or volunteer supervisors, who know them well. The UT Austin College of Pharmacy also places special emphasis on letters from pharmacists who have supervised or mentored students through shadowing, volunteering, or work experiences. Letters from family members or other individuals whom students know only on a personal level are inappropriate.

**Personal Statement:** The UHPO staff will read and provide feedback to students regarding their personal statements given sufficient time, preferably two weeks prior to when comments are needed. We also recommend that students visit The Writing Center at UTSA (<http://www.utsa.edu/twc/>) for further review.

**Interviews:** The UHPO can offer some advice as students prepare for interviews and, after interviews, would like to debrief with students about their impressions. The University Career Center also facilitates interview workshops and conducts mock interviews to provide students with feedback. For more information about their services, contact them at the Main Campus [UC 2.02.04 or (210) 458-4589] or Downtown Campus [BV 1.304 or (210) 458-2910].

**Additional Resources:** The UHPO keeps and maintains resources that will be available to students in our office. These include books, journals, handouts, and other resources. In addition, students should consult the websites of individual pharmacy schools, of the American Association of Colleges of Pharmacy (<http://www.aacp.org>), and of the American Pharmaceutical Association (<http://www.pharmacist.com>).

**Health Professions Advising:** The UHPO provides advising and support to students interested in pursuing careers in the health professions, including pharmacy. This consists of academic preparation assistance as well as information about health careers, application procedures, and entrance exams for undergraduates, postbaccalaureate students, non-degree seeking students, and alumni. Students are encouraged to seek advice and consult with the UHPO advising staff early in their college career. For more information about our appointment and walk-in schedules and our other services, please contact us:

**The University Health Professions Office (UHPO)**  
**University of Texas at San Antonio**  
**Multidisciplinary Studies Building, Room 3.02.10 (Main Campus)**  
[www.utsa.edu/healthprofessions](http://www.utsa.edu/healthprofessions)  
(210) 458-5185  
[hpoffice@utsa.edu](mailto:hpoffice@utsa.edu)

