

PHARMACY, PHARMD

GRADUATE PROGRAM IN PHARMACEUTICAL SCIENCES

The **Pharmaceutical Sciences Graduate Program** is housed in the Department of Pharmaceutical and Environmental Health Sciences in the College of Pharmacy and Health Sciences (COPHS) and is led by a group of active, productive faculty. Over the last several years COPHS has been developing its research infrastructure, which now has reached the level to support the program adequately. Collectively, the Research Centers in Minority Institutions, the Center for Cardiovascular Diseases, and the Center of Excellence in Health Disparities Research have contributed significantly to the development of research infrastructure in the COPHS.

The Doctor of Philosophy in Pharmaceutical Sciences with specialization in pharmacology and pharmaceuticals is offered through the program. The Master of Science in Pharmaceutical Sciences is also offered as a contingency program. The M.S. and Ph.D. degree curricula are designed to provide a scientifically integrated training that permits students to:

1. Acquire knowledge and skills that facilitate a comprehensive understanding of the genesis and progression of pathological conditions;
2. Apply knowledge and skills to the discovery, design, development, and delivery of drugs and dosage forms;
3. Be prepared to pursue professional careers in academic, pharmaceutical industry, and governmental settings.

ADMISSION REQUIREMENTS

In addition to meeting the requirements and following the procedures for admission to the Graduate School, applicants to the Doctor of Philosophy in Pharmaceutical Sciences must have earned a bachelor's degree in the natural or health sciences. Admission to the Ph.D. in Pharmaceutical Sciences program will be granted to students who are judged most likely to achieve eminence in the field. It is anticipated that a small number of students will be granted admission each year. Other specific requirements for admission to the program include:

1. An acceptable combined score on the Graduate Record Examination.
2. A minimum cumulative undergraduate GPA of 2.75.
3. Three letters of recommendation from individuals who are familiar with the applicant's previous academic performance and potential for success in graduate school.
4. Equivalent quantitative and qualitative measures indicating academic performance acceptable to the graduate admissions committee.

Socioeconomic factors will also be used to determine an applicant's admission status. International students, in addition to the above requirements, must meet the English Proficiency requirements of the Graduate School.

The University Core Curriculum is the same across all undergraduate bachelor's programs. Please consult the academic advisor for your designated major before selecting courses in this area.

SUMMARY

Code	Title	Hours
	General Education Core Curriculum (p. 1)	42
	Major Requirements (p. 2)	146

Other Requirements (p. 2)	35
Total Hours	223

GENERAL EDUCATION CORE CURRICULUM (STANDARD)¹

Code	Title	Hours
Communication		
ENGL 1301	Freshman English I	3
ENGL 1302	Freshman English II	3
Mathematics		
MATH 2312	Precalculus Math	3
Life and Physical Sciences		
CHEM 1311	Chemistry I	3
CHEM 1312	Chemistry II	3
Language, Philosophy, and Culture		
ENG 2XX ⁴		3
Creative Arts		
	Visual and Performing Arts ⁵	3
American History		
HIST 1301	Soc & Pol Hist US to 1877	3
HIST 1302	Soc & Pol Hist US Since 1877	3
Government/Political Science		
POLS 2305	American Government	3
POLS 2306	Texas Government	3
Social and Behavioral Sciences		
	Social and Behavioral Sciences ⁶	3
Institutional Options		
COMM 1321	Business & Professional Comm or COMM 1315 Public Address	3
PHYS 1301	College Physics I	3
Total Hours		42

1

Students should be advised by a major advisor prior to registering for any credit, particularly any core curriculum credit as listed.

2

(N) represents the number of course credits.

3

Four (4) hours will be accepted for transfer students. Students may still be required to complete their institutions required math sequence to qualify for Calculus if they do not qualify for the course upon admission. TSU Math Sequence: MATH 1314 College Algebra, and/or MATH 2312 Precalculus Math must be completed if student does not meet SAT/ACT or TSI Math scores to qualify for MATH 2413 Calculus & Analytic Geometry I in their first semester (See advisor).

4

ENGL 2332 World Literature I, ENGL 2333 World Literature II, ENGL 2326 American Literature, ENGL 2328 African-American Literature

5

Select from the following courses: THEA 1310 Introduction to Theatre, MUSI 1306 Music Appreciation, MUSI 1315 Fine Arts In Daily Living, ARTS 1315 Intro African Art, or ARTS 1315 Intro African Art (TCN: DRAM 1310, MUSI 1306, HUMA 1315, HUMA 2323, ARTS 1301).

6

Select from the following courses: PSYC 2301 General Psychology, ECON 2301 Principles Of Economics I, ECON 2302 Principles Of Economics II, SOCI 1301 Introduction To Sociology, SOCI 1306 Contemporary Social Issues, SOCI 2306 Soc Of Human Sexuality and SOCI 2346 Introduction To Anthropology.

MAJOR (PHARMACY)

Code	Title	Hours
PHAR 421 & PHAR 411	Pharmacy Practice I and Pharmacy Practice I Laboratory	3
PHAR 433 & PHAR 413	Pharmaceutics I Calculations and Pharmaceutics I Lab	4
PHCH 441	Biochemistry in Human Disease	4
PADM 423	Ethics in Healthcare	2
PHAR 401	Patient Assessment Laboratory	1
PHAR 426	Pathophysiology	2
PHAR 404	Public Health I	1
PHAR 422 & PHAR 412	Pharmacy Practice II and Pharmacy Practice II Lab	3
PHAR 434 & PHAR 414	Pharmaceutics II Dosage Forms and Pharmaceutics II Lab	4
PHAR 442	Evidence-based Practice and Biostatistics	4
PHCH 410	Introduction to Medicinal Chemistry	1
PHAR 428	Pharmacology	2
PHAR 405	Public Health II : Immunizations	1
PHAR 530	Principles of Drug Action I	3
PHAR 504	Pharcotherapy IA : Nervous System Disorders	4
PHAR 501	Pharcotherapy IB : Renal Disorders	1
PHAR 520	Integrated Laboratory I	2
PADM 515	Professional Development Seminar I	1
PHAR 539 & PHAR 519	Pharm III Pharmacokinetics and Pharm III Pharmacokinetics Lab	4
PHAR 526	IPPE I - Community I	2
PHAR 541	Principles of Drug Action II	4
PHAR 503	Pharcotherapy IIA : Endocrine System Disorders	3
PHAR 505	Pharcotherapy IIB : Cardiovascular Disorders	3
PHAR 529	Integrated Laboratory II	2
PHAR 523	Pharmacy Practice III : Complemetary and Alternative Medicines	2
PHAR 527	IPPE - Community II	1
PHAR 648	Principles of Drug Action III	4
PHAR 637	Pharmacotherapy IIIA : Infectious Diseases and Immune Disorders	4
PHAR 620	Integrated Laboratory III	2
PADM 615	Professional Development Seminar II	1
PHAR 617	Medication Therapy Management	1
PHAR 627	IPPE III - Healthcare Systems	2
PHAR 649	Principles of Drug Action IV	2
PHAR 638	Pharmacotherapy IIIB: Respiratory System Disorders	2
PHAR 639	Pharmacotherapy IV: Gastrointestinal System Disorders	3
PHAR 621	Integrated Laboratory IV	1

PADM 621	Economic Clinical Humanistic Outcomes	2
PADM 630	Pharmacy Practice Management	3
PADM 634	Pharmacy Jurisprudence	3
PHAR 628	IPPE IV - Healthcare Systems	1
Advanced Pharmacy Practice Experiences		42
PHAR 716	Research Seminar I	1
PHAR 717	Research Seminar II	1
PHAR 718	Research Seminar III	3
Professional Electives		
Select 4 SCH from the following:		4
PHAR 425	Manage Care Pharmacy Elective	
PHAR 424	Post Graduate Preparation Seminar	
PHAR 429	Emergency Preparedness	
PHAR 423	Intro to Pharmacy Residencies and Fellowships	
PADM 428	Spanish for Pharmacy Prof	

Total Hours 146

OTHER REQUIREMENTS

Code	Title	Hours
BIOL 111	Biological Science Lab I	1
BIOL 112	Biological Science Lab II	1
BIOL 1306	Biological Science I	3
BIOL 132	Biological Science II	3
BIOL 245	Human Anatomy & Physiology	4
BIOL 347	Microbiology	4
CHEM 211 & CHEM 231	Organic Chem I Lab and Organic Chem I	4
CHEM 212 & CHEM 232	Organic Chem II Lab and Organic Chem II	4
MATH 1342	Elementary Statistics	3
PHYS 213	College Phys Lab I	1
PHYS 1301	College Physics I	3
CHEM 111	Chemistry I Lab	1
CHEM 112	Chemistry II Lab	1
FS 102	Freshman Seminar/ first Year Experience	1
General Elective		1

Total Hours 35

1

Elective courses. All students must complete at least (4) semester credit hours of electives in the professional curriculum.

PHARMACY, DOCTORATE

Course	Title	Hours
Freshman		
First Semester		
BIOL 111	Biological Science Lab I	1
BIOL 1306	Biological Science I	3
CHEM 111	Chemistry I Lab	1
CHEM 1311	Chemistry I	3
COSC 1301	Intro To Compr Science I	3
ENGL 1301	Freshman English I	3
FS 102	Freshman Seminar/ first Year Experience	1

Pre-pharmacy Elective ¹		
Hours		15
Second Semester		
BIOL 112	Biological Science Lab II	1
BIOL 132	Biological Science II	3
CHEM 112	Chemistry II Lab	1
CHEM 1312	Chemistry II	3
ENGL 1302	Freshman English II	3
HIST 1301	Soc & Pol Hist US to 1877	3
MATH 2413	Calculus & Analytic Geomtry I	4
Pre-pharmacy Elective ¹		
Hours		18
Summer		
Required Summer Semester ¹		
First Semester		
HIST 1302	Soc & Pol Hist US Since 1877	3
POLS 2306	Texas Government	3
Second Semester		
POLS 2305	American Government	3
Visual & Performing Arts ³		3
Hours		12
Sophomore		
Third Semester		
BIOL 245	Human Anatomy & Physiology	4
CHEM 211	Organic Chem I Lab	1
CHEM 231	Organic Chem I	3
PHYS 1301	College Physics I	3
PHYS 213	College Phys Lab I	1
MATH 1342	Elementary Statistics	3
Social and Behavioral Sciences		
Select one of the following:		
PSYC 2301	General Psychology	
ECON 2301	Principles Of Economics I	
SOCI 1301	Introduction To Sociology	
SOCI 1306	Contemporary Social Issues	
SOCI 2306	Soc Of Human Sexuality	
SOCI 2346	Introduction To Anthropology	
Hours		18
Fourth Semester		
CHEM 212	Organic Chem II Lab	1
CHEM 232	Organic Chem II	3
English 200 Level Literature		3
COMM 1321	Business & Professional Comm	3
or COMM 1315	or Public Address	
BIOL 347	Microbiology	4
Pre-pharmacy elective ¹		
Hours		14
Total Hours		77

1

Recommended pre-pharmacy elective courses that are not requirements of the degree plan include: PHAR 111 Pharmacy Orientation, PHAR 112 Pharmacy Orientation, PHAR 211 Pharmacy Applications, PHAR 212 Medical Terminology.

2

A summer term is required to complete the Pharm.D. Curriculum.

MATH 2413 Calculus & Analytic Geomtry I:

4 hours will be accepted for transfer students. Students may still be required to complete the sequence to qualify for Calculus if they do not qualify for the course upon admission. TSUM

Sequence: MATH 1314 College Algebra and/or MATH 2312 Precalculus

Math must be completed if student does not meet SAT/ACT or TSI Math

scores to qualify for MATH 2413 Calculus & Analytic Geomtry I in their

first semester (See advisor).

3

A summer term is required to complete the pre-pharmacy curriculum in two years.

4

Visual and Performing Arts: THEA 1310 Introduction to

Theatre, MUSI 1306 Music Appreciation, MUSI 1315 Fine Arts In Daily

Living, , ARTS 1315 Intro African Art.