

DEPARTMENT OF PHARMACEUTICAL SCIENCES

The Department of Pharmaceutical Sciences, along with the Department of Pharmacy Practice, offers **the entry-level Doctor of Pharmacy Degree and the post-baccalaureate Doctor of Pharmacy Degree. Persons interested in the post-baccalaureate Doctor of Pharmacy (Pharm.D.) should contact the Office of the Assistant Dean for Student Services in the College of Pharmacy and Health Sciences at Texas Southern University directly for details on the requirements for this degree.** The entry-level Doctor of Pharmacy (Pharm.D.) is a six-year program requiring two years of study at the pre-professional (pre-pharmacy) level and four years of study at the professional level. Courses offered through this unit include the following: (1) pharmaceutical and medicinal chemistry (PHCH), (2) pharmaceuticals (PHAR), and (3) pharmacology and allied sciences (PAS).

The Department of Pharmaceutical Sciences also offers the Master of Science (M.S.) degree and the Doctor of Philosophy (Ph.D.) degree in Pharmaceutical Sciences. Students who are interested in pursuing the M.S. and/or Ph.D. degree in Pharmaceutical Sciences should consult the Graduate School Bulletin of Texas Southern University for further information or visit the website (www.tsu.edu).

Members of the Department of Pharmaceutical Sciences are housed in Gray Hall with the Department Office located in Room 124. The Department supports the primary mission of the College of Pharmacy and Health Sciences.

Since the Department offers the entry-level Pharm.D. and the post-baccalaureate Pharm.D. along with the Department of Pharmacy Practice (described in the next section), students are referred to the end of the next section for a summary of requirements for the entry-level Pharm.D. and the sequence in which required courses should be taken. Courses offered through this instructional unit are described below.

Students should refer to admission policies, comprehensive examination information, and other important information regarding the completion of the entry-level Pharm.D. under the College of Pharmacy and Health Sciences introductory section of this document.

LISTING OF FACULTY IN THE DEPARTMENT

Akpaffiong, Macauly J.

Professor

Pharmacology

B.S., Texas Southern University

M.Sc., Ph.D., University of Bath

Pharm.D., University of Southern California

Bates, Theodore R.

Professor

Pharmacokinetics

B.S., Ph.D., Columbia University

Bell, Edward C.

Assistant Professor

Pharmaceutics

B.S., Tougaloo College

Ph.D., Auburn University

Enigbokan, Mofolorunso A.

Associate Professor

Pharmacology

B.S., M.S., Texas Southern University

Ph.D., Howard University

Eugere, Edward J.

Professor

Pharmacology

B.S., Xavier University

M.S., Wayne State University

Ph.D., University of Connecticut

Felder, Tyrone B.

Associate Professor

Pharmaceutics

B.S., Florida A & M University

Ph.D., University of Kentucky

Guilford, James

Professor

Pharmaceutical Chemistry

B.S., St. John's University

M.S., Ph.D., University of Michigan

Hayes, Barbara E.

Associate Professor

Pharmacology

B.S., Texas Southern University

M.S., Purdue University

Ph.D., University of Houston

Hickman, Eugene, Sr.

Professor (Retired)

Pharmaceutics

B.S., Texas Southern University

M.S., University of Texas

Ph.D., University of Iowa

Liang, Dong

Associate Professor

Pharmaceutics

B.S., M.S., Zhejiang Medical University

Ph.D., University of Houston

Mehta, Chander S.

Professor

Pharmacology

B.S., University of Bombay

B.Pharm., Ph.D., Washington State University

Milton, Shirlette Glover

Associate Professor

Pharmaceutical Chemistry

B.S., Texas Southern University

M.S., Ph.D., University of Texas

Oyekan, Adebayo O.

Professor

Pharmacology

D.V.M., University of Nigeria

Ph.D., University of London

Shivachar, Amruthesh

Assistant Professor

Pharmaceutical Chemistry

B.Sc., Sarada Vilas Science College

M.Sc., Ph.D., University of Mysore

Wells, Patrick

Dean Emeritus

B.S., Texas Southern University

M.S., Ph.D., University of Nebraska at Lincoln

Xiong, Quanbo

Assistant Professor

Pharmaceutical Chemistry

B.S., M.S., Shanghai Medical University

Ph.D., Toyama Medical and Pharmaceutical University

PHARMACEUTICAL SCIENCES COURSES

- PAS 415 Pathophysiology Laboratory (1)**
Demonstrations, case studies, recitation, presentations, and small group discussions to accompany PAS 435. Three hours of laboratory per week. Prerequisite/Corequisite: Successful completion of or concurrent enrollment in PAS 435.
- PAS 435 Pathophysiology I - Cells and Tissues (3)**
Concepts of pathophysiology of cells and tissues; altered cellular and tissue biology; cellular environment of fluids and electrolytes; genes and genetic disease. Mechanisms of immunity and inflammation, tumorigenesis, and carcinogenesis. Three hours of lecture per week. Prerequisite: First professional year standing in the College of Pharmacy and Health Sciences. Corequisite: Concurrent enrollment in PAS 415.
- PAS 436 Pathophysiology II - Organs and Tissues (3)**
Pathophysiologic alterations in organs and systems with emphasis on the nervous, endocrine, reproductive, hematologic, cardiovascular, and lymphatic systems. Three hours of lecture per week. Prerequisites: PAS 415 and PAS 435.
- PAS 517 Pharmacology Toxicology I Laboratory (1)**
Demonstrations, case studies, recitation, presentations, and small group discussions to accompany PAS 537. Three hours of laboratory per week. Prerequisite/Corequisite: Successful completion of or concurrent enrollment in PAS 537.
- PAS 535 Pathophysiology III - Alterations (2)**
Pathophysiologic alterations of organs and organ systems, including the pulmonary, digestive, musculoskeletal systems and skin. Two hours of lecture per week. Prerequisite: PAS 436.
- PAS 537 Pharmacology Toxicology I (3)**
Pharmacology and toxicology of drugs used to treat disorders of the gastrointestinal, respiratory, and cardiovascular systems. Three hours of lecture per week. Prerequisite: Second professional year standing in the College of Pharmacy and Health Sciences or consent of the instructor. Corequisite: Concurrent enrollment in PAS 517 and PAS 535.
- PAS 539 Chemotherapeutics (3)**
In-depth study of the principles of chemotherapy and a thorough discussion of agents used to manage infectious and neoplastic diseases. Three hours of lecture per week. Prerequisites: PAS 517, PAS 535, PAS 537, second professional year standing in the College of Pharmacy and Health Sciences and BIOL 347 or the equivalent.
- PAS 547 Pharmacology Toxicology II (4)**
Elucidates the pharmacology and toxicology of drugs used to treat disorders of the central nervous system, musculoskeletal system, and renal system. Three hours of lecture and three hours of laboratory per week. Prerequisites: PAS 517 and PAS 537.

PHAR 111	Pharmacy Orientation	(1)
	Survey of the pharmacy profession with emphasis on history, ethics, careers, and professional organizations. One hour of lecture per week.	
PHAR 112	Pharmacy Orientation	(1)
	Survey of the pharmacy profession with emphasis on history, ethics, careers, and professional organizations. One hour of lecture per week.	
PHAR 211	Pharmacy Applications	(1)
	Study of the fundamental principles underlying the science and practice of pharmacy in the United States. One hour of lecture per week. Prerequisites: PHAR 111, PHAR 112 and successful completion of freshman biology and chemistry courses.	
PHAR 212	Medical Terminology	(1)
	Programmed course of study building medical words from Greek and Latin prefixes, suffixes, word roots, and combining forms. Professional students are required to complete this course. One hour of lecture per week.	
PHAR 413	Pharmaceutics I Laboratory	(1)
	Demonstrations, case studies, recitation, presentations, and small group discussions to accompany PHAR 433. Three hours of laboratory per week. Prerequisite/Corequisite: Successful completion of or concurrent enrollment in PHAR 433.	
PHAR 414	Pharmaceutics II Laboratory	(1)
	Demonstrations, case studies, recitation, simulations, presentations, and small group discussions to accompany PHAR 434. Three hours of laboratory per week. Prerequisite/Corequisite: Successful completion of or concurrent enrollment in PHAR 434.	
PHAR 420	Computer Applications in Pharmacy	(2)
	Designed to provide knowledge and skills necessary to use microcomputers in pharmacy practice management, with emphasis on the study and evaluation of computer information systems. Two hours of lecture per week. Prerequisite: First professional year standing in the College of Pharmacy and Health Sciences or consent of the instructor.	
PHAR 433	Pharmaceutics I - Calculations	(3)
	Problems, calculations, and processes involving weights and measures, specific gravity, percentage, solutions, and alligations peculiar to pharmacy and related sciences. Three hours of lecture per week. Prerequisite: First professional year standing in the College of Pharmacy and Health Sciences. Corequisite: Concurrent enrollment in PHAR 413.	
PHAR 434	Pharmaceutics II - Dosage Forms I	(3)
	Biopharmaceutics and the application of physicochemical principles with applications to drugs, dosage forms, and drug action. Three hours of lecture per week. Prerequisites: PHAR 413 and PHAR 433. Corequisite: Concurrent enrollment in PHAR 414.	

PHAR 513	Pharmaceutics III Laboratory	(1)
	Demonstrations, experiments, simulations, case studies, recitation, presentations, and small group discussions to accompany PHAR 533. Three hours of laboratory per week. Prerequisite/Corequisite: Successful completion of or concurrent enrollment in PHAR 533.	
PHAR 514	Pharmaceutics IV Laboratory	(1)
	This laboratory course is intended to provide students knowledge and skills in handling IV products in accordance to the USP-NF Chapter 797 Guidelines. In addition, this course will provide knowledge and technical skills in topics related to PHARM 534 course. Three hours of laboratory per week. Prerequisite/Corequisite: Successful completion of or concurrent enrollment in PHAR 534.	
PHAR 533	Pharmaceutics III - Dosage Forms II	(3)
	Biopharmaceutics and applications of physiochemical principles to drugs, dosage forms, and drug action. Three hours of lecture per week. Prerequisites: PHAR 414 and PHAR 434. Corequisite: Concurrent enrollment in PHAR 513.	
PHAR 534	Pharmaceutics IV - Dosage Forms III	(3)
	Explores the principles and application of novel drug delivery systems and sterile products. Three hours of lecture per week. Prerequisites: PHAR 513 and PHAR 533. Corequisite: Concurrent enrollment in PHAR 514.	
PHAR 601	Special Problems	(0-8)
	Methods in pharmaceutical sciences and clinical research; application of hypothesis formulation, literature evaluation, experimental design, clinical skills, data acquisition/analysis, and formal presentations. Variable number of hours of lecture per week. Students may enroll in up to a total of 8 semester credit hours of Special Problems while in the professional pharmacy program. Prerequisite: Special permission by the Department.	
PHAR 611	Substance Abuse Education	(2)
	Drug educational program for organizing and training pharmacy students to speak to junior and senior high school students on the potential hazards of drug abuse. Two hours of lecture per week. Prerequisite: Second professional year standing in the College of Pharmacy and Health Sciences or consent of the instructor.	
PHAR 614	Pharmaceutics V Laboratory	(1)
	Demonstrations, case studies, recitation, presentations, computer simulations, and small group discussions to accompany PHAR 634. Three hours of laboratory per week. Prerequisite/Corequisite: Successful completion of or concurrent enrollment in PHAR 634.	
PHAR 616	Pharmaceutics VI Laboratory	(1)
	Demonstrations, case studies, recitation, presentations, and small group discussions to accompany PHAR 636. Three hours of laboratory per week. Prerequisite/Corequisite: Successful completion of or concurrent enrollment in PHAR 636.	

- PHAR 634 Pharmaceutics V - Basic Pharmacokinetics (3)**
- Study of factors affecting bioavailability and time course of action of drugs in humans. Three hours of lecture per week. Prerequisites: PHAR 514 and PHAR 534. Corequisite: Concurrent enrollment in PHAR 614.
- PHAR 636 Pharmaceutics VI - Applied Pharmacokinetics (3)**
- Application of pharmacokinetic principles in selection, dosing, dosage adjustments, and evaluation of drug therapy in the institutionalized patient. Three hours of lecture per week. Prerequisites: PHAR 614 and PHAR 634. Corequisite: Concurrent enrollment in PHAR 616.
- PHCH 411 Pharmaceutical Chemistry I Laboratory (1)**
- Demonstrations, case studies, recitation, presentations, and small group discussions to accompany PHCH 431. Three hours of laboratory per week. Prerequisite/Corequisite: Successful completion of or concurrent enrollment in PHCH 431.
- PHCH 412 Pharmaceutical Chemistry II Laboratory (1)**
- Demonstrations, case studies, recitation, presentations, and small group discussions to accompany PHCH 432. Three hours of laboratory per week. Prerequisite/Corequisite: Successful completion of or concurrent enrollment in PHCH 432.
- PHCH 431 Pharmaceutical Chemistry I (3)**
- Introduction to medicinal chemistry that includes review of chemistry of natural products; relationship of physicochemical properties to drug action; and biochemistry of carbohydrates, lipids, proteins, and enzymes. Three hours of lecture per week. Prerequisite: First professional year standing in the College of Pharmacy and Health Sciences or consent of the instructor. Corequisite: Concurrent enrollment in PHCH 411.
- PHCH 432 Pharmaceutical Chemistry II - Biochemistry (3)**
- Discussion of hormones, vitamins, enzymes, nucleic acids, protein synthesis, biological oxidation, and intermediary metabolism. Drug metabolism and biochemical basis of common clinical laboratory tests discussed. Three hours of lecture per week. Prerequisites: PHCH 431 and PHCH 411. Corequisite: Concurrent enrollment in PHCH 412.
- PHCH 531 Pharmaceutical Chemistry III (3)**
- Principles of medicinal chemistry and drug metabolism pathways. Application of chemical principles to specific drug categories. Three hours of lecture per week. Prerequisites: Successful completion of PHCH 411, PHCH 412, PHCH 431, and PHCH 432. Corequisite: Concurrent enrollment in PAS 537.
- PHCH 532 Pharmaceutical Chemistry IV (3)**
- Application of chemical principles to the central nervous system; non-steroidal, anti-inflammatory, chemotherapeutic, diagnostic, radio-pharmaceutical, and miscellaneous organic and inorganic medicinal agents. Three hours of lecture per week. Prerequisite: PHCH 531.