

PHARMACY AND PHARMACEUTICAL SCIENCES



The University of Toledo



Doctor of Pharmacy
6-year program

sound like you?

- Be a drug expert as part of a hospital care team
- Interact with patients in a community pharmacy setting
- Participate in clinical investigations of new drugs

did you know?

The symbol “Rx” is actually a corruption of the ancient symbol for the Roman god Jupiter, whose blessing was invoked upon every prescription to ensure its purity.

Doctor of Pharmacy – PharmD

Pharmacists make sure their patients use medication safely and effectively, whether they practice in community pharmacies, hospitals or in home care. They also perform research or work at pharmaceutical and health-care companies. As one of the nation’s most trusted professions, pharmacy involves drug preparation, patient counseling, disease management and clinical investigation.

All PharmD students begin their studies in the pre-professional division. They then apply for admission to the professional division. Pharmacy students enjoy the personal attention of a small college while having the resources and opportunities of a large university available. Graduates of the College of Pharmacy & Pharmaceutical Sciences consistently pass the Pharmacy Board Licensure Exam at a rate higher than the national average. Upon passing the licensure exam, UT pharmacy students have had a 100 percent job placement rate for five decades. Students work in state-of-the-art laboratories with equipment and computer technology housed in the College of Pharmacy and Pharmaceutical Sciences building which opened in 2010.

The College of Pharmacy & Pharmaceutical Sciences is affiliated with more than 200 pharmacies, hospitals and clinics in Toledo, throughout Ohio and across the country. These institutions give students real-world experiential training that complements their classroom instruction. The College of Pharmacy & Pharmaceutical Sciences’ professional experience programs have been rated among the top in the United States.

What to expect when you graduate

The need for pharmacists has increased because of the tremendous advances in knowledge about diseases, medications and factors that enhance or reduce the safety and effectiveness of drugs. Therefore, practice opportunities and starting salaries remain strong.

Check out all our majors online @ utoledo.edu/admission/undergraduate



THE UNIVERSITY OF
TOLEDO
1872

PHARMACY AND PHARMACEUTICAL SCIENCES



The University of Toledo



Bachelor of Science
4-year program

sound like you?

- Discover new drugs for disease therapy
- Prepare for medical school
- Work in pharmaceutical sales and management
- Study toxicology of drugs and environmental pollutants

Bachelor of Science in Pharmaceutical Sciences

The Bachelor of Science in Pharmaceutical Sciences (BSPS) degree is a four-year baccalaureate program. The pharmaceutical sciences represent the collective basic sciences that underlie pharmacy. This degree program is designed for students who wish to pursue careers related to the pharmaceutical industry, pharmaceutical science and research, pharmaceutical administration and sales, the biomedical industry, environmental toxicology, forensic science, as well as health care administration. It also prepares students to enter medical school, law school, or graduate studies.

UT's BSPS degree program is one of the few programs of its kind nationwide. Students work in state-of-the-art laboratories with equipment and computer technology housed in the College of Pharmacy and Pharmaceutical Sciences building which opened in 2010. The required internships provide real-world workplace experiences highly desired by employers.

All BSPS majors begin their studies in the pre-professional division. Students then choose to apply for admission to the professional division. Students can choose from four majors. Medicinal and biological chemistry focuses on the aspect of science involved with the design and synthesis of drugs. Pharmaceutics is the study of physical and chemical attributes of drugs. Pharmacology/toxicology looks at the way drugs interact with different living systems and the effects of toxic compounds in the body. Finally, pharmacy administration looks at the business and managerial aspects of the pharmacy profession.

What to expect when you graduate

Graduates of the BSPS program have a variety of career paths from which to choose, including pre-clinical research and development, clinical and regulatory affairs, product marketing and sales, science writing and editing, investment analysis, forensic science, product testing, and manufacturing. Our graduates are in high demand because of their unique training and preparation.

Check out all our majors online @ utoledo.edu/admission/undergraduate



THE UNIVERSITY OF
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Sample Curriculum

Pre-Professional Division of PharmD and BSPS Programs

FIRST YEAR

Fall Semester

BIOL 2150 Fundamentals of Life Science I	4
BIOL 2160 Life Science I Lab	1
CHEM 1230 General Chemistry I	4
CHEM 1280 General Chemistry I Lab	1
MATH 1750 Calculus for Life Sciences I	4
PHPR 1000 Orientation	1
UT Core Requirement (ENG 1110)*	3

Spring Semester

BIOL 2170 Fundamentals of Life Science II	4
BIOL 2180 Life Science Lab II	1

CHEM 1240 General Chemistry II	4
CHEM 1290 General Chemistry Lab II	1
MATH 1760 Calculus for Life Sciences II	3
UT Core Requirement (ENG 1130 or equivalent)*	3

SECOND YEAR

Fall Semester

CHEM 2410 Organic Chemistry I	3
CHEM 2460 Organic Chemistry Lab I	1
PHCL 2600 Functional Anatomy and Pathophysiology I	4
PHYS 1750 Introduction to Physics or equivalent	4

UT Core Requirement (PSY 1010 or SOC 1010)*	3
UT Core Requirement (Diversity/Multicultural)*	3

Spring Semester

CHEM 2420 Organic Chemistry II	3
CHEM 2470 Organic Chemistry Lab II	1
PHCL 2620 Functional Anatomy and Pathophysiology II	4
UT Core Requirement (ECON 1200)*	3
UT Core Requirement (Humanities/Fine Arts)*	3
UT Core Requirements (Humanities/Fine Arts)**	3

Professional Division of BSPS Program

MEDICINAL AND BIOLOGICAL CHEMISTRY (MBC) MAJOR

P1 YEAR

First Semester

MBC 3310 Medicinal Chemistry I	2
MBC 3330 Applied Drug Design	2
MBC 3550 Physiological Chemistry I	or
CHEM 3510 Biochemistry I	3
PHCL 3700 Pharmacology I	3
Major Elective (Recommend CHEM 3310)	2
Major Elective (Recommend CHEM 3710)	3
Major Elective (Recommend MBC 3880)	2

Second Semester

MBC 3320 Medicinal Chemistry II	2
MBC 3560 Physiological Chemistry II	or
CHEM 3520 Biochemistry II	3
PHCL 3730 BSPS Pharmacology II	3
Major Elective (Recommend CHEM 3360)	2
Major Elective (Recommend CHEM 3720)	3
Major Elective (Recommend MBC 3100)	1
Major Elective (Recommend MBC 3880)	2

P2 YEAR

First Semester

MBC 4710 Targeted Drug Design	3
Major Elective (Recommend MBC 4850)	1-10
Major Elective (Recommend MBC 4870)	1-10
Major Elective (Recommend MBC 4880)	1-10

Second Semester

MBC 4780 Internship in Med. & Biol. Chem	6-12
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PHARMACEUTICS (PHAR) MAJOR

P1 YEAR

First Semester

MBC 3310 Medicinal Chemistry I	2
MBC 3330 Applied Drug Design	2
MBC 3550 Physiological Chemistry I	3
PHCL 3700 Pharmacology I	3
PHPR 3010 Pharmaceutical Calculations	2
PHPR 3020 Pharmaceutical Technology I	4

Second Semester

MBC 3320 Medicinal Chemistry II	2
MBC 3560 Physiological Chemistry II	3
MBC 3800 Microbiology & Immunology	3
PHCL 3730 BSPS Pharmacology II	3
PHPR 3030 Pharmaceutical Technology II	4
Pharmaceutical or General Electives (Recommend MBC 3100)	1

Summer between P1 and P2 Year

PHPR 4880 Internship in Pharmaceutics	6-12
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P2 YEAR

First Semester

CHEM 3310 Analytical Chemistry	2
PHCL 4810 BSPS Pharmacology III	3
PHPR 4160 Pharmacokinetics	3
Pharmaceutical or General Electives	2-5
Second Semester	
BIOL 3030 Cell Biology	3
BIOL 3040 Cell Biology Lab	2
CHEM 3360 Analytical Chemistry Lab	2
PHCL 4820 BSPS Pharmacology IV	3
Pharmaceutical or General Electives	2-6

PHARMACOLOGY/TOXICOLOGY (PTOX) MAJOR

P1 YEAR

First Semester

MBC 3310 Medicinal Chemistry I	2
MBC 3550 Physiological Chemistry I	3
PHCL 3700 Pharmacology I	3
PHCL 4730 Toxicology I	3
Major Electives (Recommend BIOL 3010 & 3020, MBC 3330)	5-6

Second Semester

MBC 3320 Medicinal Chemistry II	2
MBC 3560 Physiological Chemistry II	3
PHCL 3730 BSPS Pharmacology II	3
PHCL 3810 Pharmacology &	

Toxicology Lab	1
PHCL 4750 Toxicology II	3
Major Elective (Recommend MBC 3100)	1
Major Elective	3

P2 YEAR

First Semester

MBC 4710 Targeted Drug Design	3
PHCL 4810 BSPS Pharmacology III	3
Major Electives	9

Second Semester

PHCL 4780 Internship in Pharmacology/Toxicology	6-12
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PHARMACY ADMINISTRATION (PHAM) MAJOR

P1 YEAR

First Semester

BUAD 2060 Data Analysis for Business	or
MATH 2630 or MATH 2600 or equivalent	3
ECON 1150 Principles of Macroeconomics	3
MBC 3310 Medicinal Chemistry I	2
MBC 3550 Physiological Chemistry I	3
PHCL 3700 Pharmacology I	3
PHPR 3260 Pharmacy Healthcare Administration I	2

Second Semester

ACTG 1040 Principles of Financial Accounting	or
BUAD 2040 Financial Accounting Information	3
MBC 3320 Medicinal Chemistry II	2
MBC 3560 Physiological Chemistry II	3
PHCL 3730 BSPS Pharmacology II	3
PHPR 4550 Analysis of Pharm. Environment	3
Major Elective	2-3

PHARMACY AND PHARMACEUTICAL SCIENCES

For more information about
Pharmacy programs, contact:

Office of Student Affairs
College of Pharmacy and Pharmaceutical Sciences
The University of Toledo
Toledo, OH 43614-2595
419.383.1904 • pharmacy@utoledo.edu
utoledo.edu/pharmacy

Group campus tours are available Monday through Friday at 10:30 a.m. or 2:30 p.m., and on Saturday at 11:15 a.m., year round, with the exception of national holidays. Individual admission appointments are available by request. Individualized college or department visits are also available weekdays at 1:15 p.m. by appointment.

utoledo.edu/admission/campusvisit • 800.5TOLEDO

Sample Curriculum

Professional Division of BSPS Program (continued)

P2 YEAR			Second Semester
First Semester			
ACTG 1050 Principles of Management Accounting	or	BUAD 3030 Manage. & Behave. Process in Organizations	PHPR 4780 Internship in Pharmacy Adm
BUAD 2050 Accounting for Business Decision-Making	3	BUAD 3040 Prin. of Financial Management	6-12
BUAD 3010 Principles of Marketing	3	PHCL 4810 BSPS Pharmacology III	
		PHPR 4600 Seminar in Pharmacy Administration	
		Major Elective	1
			2-3

Professional Division of PharmD Program

PPT: Pathophysiology and Pharmacotherapy		Spring Semester		PHPR 6340 Research Design & Drug Literature Eval 2	2
PPD: Professional Practice Development		MBC 4300 Medicinal Chemistry III	2	PHPR 6920 IPPE 3	1
PHCAD: Pharmacy Health Care Administration		PHCL 4720 Pharmacology IV	2	Graduate Professional Electives*	2-3
IPPE: Introductory Pharmacy Practice Experience		PHPR 4330 Research Design & Drug Literature Eval I	2		
APPE: Advanced Pharmacy Practice Experience		PHPR 4080 PPD-4	4	Spring Semester	
		PHPR 4140 PPT-4	3	MBC 6320 Neurological & Psychiatric Drugs 1	
P1 YEAR		PHPR 4520 PHCAD-2	2	PHCL 6320 Neurological & Psychiatric Pharmacology	1
Fall Semester		PHPR 4920 IPPE 2	1	PHPR 6080 PPD-6	2
MBC 3310 Medicinal Chemistry I	2	* A total of 3 credit hrs of Undergraduate Professional Electives is required		PHPR 6140 PPT-7	4
MBC 3550 Physiological Chemistry I	3	Note: At the end of the P2 year, students are candidates for a BS degree in pharmaceutical sciences leading toward a PharmD degree.		PHPR 6250 Self-care	4
PHCL 3700 Pharmacology I	3			PHPR 6280 PHCAD-4	2
PHPR 3130 PPT-1	2			PHPR 6310 Jurisprudence & Ethics	1
PHPR 3070 PPD-1	4			Graduate Professional Electives*	2-3
PHPR 3260 PHCAD-1	2	P3 YEAR		* A total of 5 credit hours of Graduate Professional Electives is required	
PHPR 3920 IPPE 1	1	Summer Semester Immediately Following P2 Year			
		PHPR 6120 PPT-5	4	P4 YEAR	
Spring Semester		PHPR 6920 IPPE 3	1	Fall Semester	
MBC 3320 Medicinal Chemistry II	2	Graduate Professional Electives*	2,3 or 5	PHPR 8620 Seminar II (Fall or Spring)	2
MBC 3560 Physiological Chemistry II	3			PHPR 8940:001 APPE I	4
MBC 3800 Microbiology & Immunology 3		Fall Semester		PHPR 8940:002 APPE II	4
MBC 3850 Microbiology & Immunology Lab 1		MBC 5300 Molecular Basis of Cancer Chemotherapy	1	PHPR 8940:003 APPE III	4
PHCL 3720 Pharmacology II	2	PHPR 5300 Design & Applications of Cancer Chemo	1	PHPR 8940:004 APPE IV	4
PHPR 3140 PPT-2	2	PHPR 6070 PPD-5	2		
PHPR 3080 PPD-2	4	PHPR 6130 PPT-6	4	Spring Semester	
PHPR 3920 IPPE 1	1	PHPR 6160 Advanced Applied Pharmacokinetics	3	PHPR 8620 Seminar II (Fall or Spring)	2
		PHPR 6260 PHCAD-3	1	PHPR 8940:005 APPE V	4
P2 YEAR		PHPR 6610 Seminar I	1	PHPR 8940:006 APPE VI	4
Fall Semester				PHPR 8940:007 APPE VII	4
PHCL 4700 Pharmacology III	2			PHPR 8940:008 APPE VIII	4
PHPR 4070 PPD-3	4			Note: At end of the P4 year, students are candidates for a PharmD degree	
PHPR 4130 PPT-3	4				
PHPR 4160 Pharmacokinetics	3				
PHPR 4920 IPPE 2	1				
Undergraduate Professional Electives*	3				

* Suggested Sequence ** Select a course that will simultaneously fulfill a UT diversity studies Core Curriculum requirement.