

# DOCTOR OF PHARMACY (PHARM D)

The program of study leading to pharmacy licensure is the entry-level Doctor of Pharmacy (Pharm.D.). Students seeking a degree that will lead to pharmacy licensure will need to complete two years of prerequisite course work prior to matriculation into the professional division of the College of Pharmacy and Pharmaceutical Sciences (CPPS). Following the completion of the prerequisite coursework, students will apply to the professional division. Admission to the professional division of the college is competitive.

Following admission to the professional division, the entry-level Pharm.D. program students will complete a Bachelor of Science in Pharmaceutical Sciences (BSPS) degree prior to more focused course work in pharmacotherapy and the practice of pharmacy. Students in the entry-level Pharm.D. track who have completed the BSPS degree at The University of Toledo are eligible to continue in the Pharm.D. program.

To graduate with a Pharm.D. degree, students must meet the current academic performance standards. Only students who successfully complete the Pharm.D. degree will qualify for pharmacy licensure. A total of 129.5 semester hours is required for graduation with the BSPS-Pharm.D. track degree. A total of 69 graduate semester hours is required for graduation with the Pharm.D. degree. The curriculum is outlined below.

## DOCTOR OF PHARMACY/PHARMD (FOR P1 STUDENTS ENTERING IN FALL 2018 AND AFTER) PREPROFESSIONAL

First Term		Hours
PHPR 1000	Orientation <sup>1</sup>	1
MATH 1850	Single Variable Calculus I *	4
CHEM 1230	General Chemistry I *	4
CHEM 1280	General Chemistry Lab I	1
BIOL 2170	Fundamentals of Life Science: Biomolecules, Cells, and Inheritance	4
BIOL 2180	Fundamentals of Life Science Laboratory: Biomolecules, Cells, and Inheritance	1
<b>Hours</b>		<b>15</b>
Second Term		Hours
PHCL 2610	Introductory Physiology	3
MATH 2640	Statistics for Applied Science <sup>*2</sup>	3
CHEM 1240	General Chemistry II	4
CHEM 1290	General Chemistry Lab II	1
ENGL 1110	College Composition I	3
Diversity of US <sup>3</sup>		3
<b>Hours</b>		<b>17</b>
Third Term		Hours
CHEM 2410	Organic Chemistry I	3

CHEM 2460	Organic Chemistry Laboratory I for Non-Majors	1
PHYS 1750	Introduction To Physics <sup>1</sup>	4
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
Social Sciences Core <sup>3</sup>		3
<b>Hours</b>		<b>14</b>
Fourth Term		Hours
CHEM 2420	Organic Chemistry II	3
CHEM 2470	Organic Chemistry Laboratory II for Non-Majors	1
Social Sciences Core <sup>3</sup>		3
Arts/Humanities Core <sup>3</sup>		3
Arts/Humanities Core <sup>3</sup>		3
Non-US Diversity <sup>3</sup>		3
<b>Hours</b>		<b>16</b>
<b>Total Hours</b>		<b>62</b>

<sup>1</sup> Only offered during Fall semesters.

<sup>2</sup> Not required prior to P1 for BSPS-only applicants.

<sup>3</sup> If double-dip, PREP courseload reduced by 3 hours. Only one double dip is allowed for the UT Core requirements.

\* Students accepted into the College of Pharmacy and Pharmaceutical Sciences should be academically prepared to be placed into MATH 1850 and CHEM 1230. Students placing into a lower math level - MATH 1200, MATH 1320 or MATH 1750 and/or placing into a lower level chemistry - CHEM 1090 (based on students' testing scores) will require additional hours for graduation.

Students should consult their Degree Audit for coursework that fulfills elective course requirements in the General Education/Core area.

## Professional

Fifth Term		Hours
MBC 3310	Medicinal Chemistry I: Drug Action And Design	2
MBC 3550	Physiological Chemistry I: Structure And Function Of Biological Macromolecules	3
PHCL 3700	Pharmacology I: Principles of Pharmacology, Autonomic Pharmacology and Related Pharmacology	3
PHPR 3000	Pharmaceutics and Dosage Form Design	5
PHPR 3050	Interprofessional Approach to Patient Care	1
PHPR 3300	Commonly Prescribed Meds and Med Term 1	1
PHPR 3450	Pharmacy Skills Development-1	2
PHPR 3920	Introductory Pharmacy Practice Experience I	1
<b>Hours</b>		<b>18</b>
Sixth Term		Hours
MBC 3552	Physiological Chemistry II Cellular Metabolism and Homeostasis	2

MBC 3860	Microbiology for Pharmaceutical Professionals	2
PHPR 3250	Introduction to Self Care	1
PHPR 3310	Introduction to Pharmacy Law	1
PHPR 3460	Pharmacy Skills Development-2	2
PHPR 3930	Introductory Pharmacy Practice Experience 2	1
PHM 3000	Integrated Pharmaceutical and Clinical Sciences 1	6
PHCL 4160	Biopharmaceutics & Pharmacokinetics	3

**Hours 18**

#### Seventh Term

PHPR 4220	Patient Centered Care	2
PHPR 4350	Pharmacy Skills Development - 3	2
PHPR 4530	Evidence Based Medicine 1	3
PHPR 4300	Commonly Prescribed Meds and Med Term II	1
PHPR 4920	Introductory Pharmacy Practice Experience 3	1
PHM 4000	Integrated Pharmaceutical and Clinical Sciences 2	8

**Hours 17**

#### Eighth Term

PHPR 4270	Health Systems	1.5
PHPR 4360	Pharmacy Skills Development - 4	2
PHPR 4540	Evidence Based Medicine 2	2
PHPR 4930	Introductory Pharmacy Practice Experience 4	1
PHM 4200	Integrated Pharmaceutical and Clinical Sciences 3	8

**Hours 14.5**

**Total Hours 67.5**

Code	Title	Hours
	Preprofessional	62
	Professional	67.5
	Total Hours	129.5

Following admission to the professional division, the entry-level Pharm.D. program students will complete a bachelor of science in pharmaceutical sciences degree prior to more focused course work in pharmacotherapy and pharmaceutical care. Students in the entry-level Pharm.D. track who have completed the bachelor of science in pharmaceutical sciences degree at The University of Toledo and meet progression standards are eligible to continue in the Pharm.D. program.

In order to graduate with a Pharm.D. degree, students must meet the current academic performance standards. Only students who successfully complete the Pharm.D. degree will qualify for licensure in the practice of pharmacy. A total of 126.5 semester hours is required for graduation with the bachelor of science in pharmaceutical sciences-Pharm.D. track degree. A total of 69 graduate semester hours is required for graduation with the Pharm.D. degree. The Pharm. D. program is

accredited by ACPE and will be revisited for reaccreditation in Fall of 2019.

#### GRADUATE PROFESSIONAL DOCTOR OF PHARMACY

Students must graduate with the BSPS Doctor of Pharmacy prior to beginning the final two years (ninth through thirteenth terms) of the Doctor of Pharmacy program.

Ninth Term	Hours
Institutional IPPEs	0

**Hours 0**

#### Tenth Term

PHPR 6000	Drug Information Seminar ((Fall or Spring)) <sup>2</sup>	2
PHPR 6220	Pharmacoeconomics and Outcomes Research	1
PHPR 6460	Pharmacy Skills Development - 5	2
PHPR 6920	Introductory Pharmacy Practice Experience 5	1

Professional Elective<sup>1</sup> 4

PHM 6000	Integrated Pharmaceutical and Clinical Sciences 4	7
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**Hours 17**

#### Eleventh Term

PHPR 6000	Drug Information Seminar ((Fall or Spring)) <sup>2</sup>	-
PHPR 6250	Advanced Self Care <sup>3</sup>	3
PHPR 6270	Business Aspects of Pharmacy	2
PHPR 6310	Jurisprudence and Ethics	1
PHPR 6470	Pharmacy Skills Development - 6	2
PHM 6200	Integrated Pharmaceutical and Clinical Sciences 5	5

Professional Elective<sup>1</sup> 3

**Hours 16**

#### Twelfth Term

PHPR 8940	Clinical Clerkship	4
PHPR 8940	Clinical Clerkship	4
PHPR 8940	Clinical Clerkship	4
PHPR 8940	Clinical Clerkship	4
PHPR 8940	Clinical Clerkship	4

**Hours 20**

#### Thirteenth Term

PHPR 8940	Clinical Clerkship	4
PHPR 8940	Clinical Clerkship	4
PHPR 8940	Clinical Clerkship	4
PHPR 8940	Clinical Clerkship	4

**Hours 16**

**Total Hours 69**

<sup>1</sup> A total of 7 credit hours of Graduate Professional Electives is required.

<sup>2</sup> This course may be taken in Fall or Spring, making the program a total of 69 hours.

<sup>3</sup> Effective Spring 2021

## Pharm.D. Graduate Professional Electives

The following is a list of recommended graduate professional electives. A total of 7 credit hours of graduate professional electives is required. Other electives may be chosen with the written approval of the CPPS Curriculum Committee. A graduate course which significantly overlaps in content with a course used to fulfill the undergraduate professional elective requirement will not count towards fulfilling the graduate professional elective requirement. Credit for courses taken outside The University of Toledo can be counted towards professional elective credit requirements if a grade of C or better is earned, but grades will not be factored into CPPS or University of Toledo GPA calculations.

Code	Title	Hours
<b>MBC</b>		
MBC 5100/7100	Ethical Conduct Research	1
MBC 5380	Medicinal And Poisonous Plants	3
MBC 5620/7620	Biochemical Techniques	2
MBC 6100/8100	Advanced Immunology	2
MBC 6190/8190	Advanced Medicinal Chemistry	4
MBC 6200/8200	Biomedical Chemistry	4
MBC 6400	Cannabis Science: Plants and Products	3
MBC 6980	Special Topics In Biomedical Chemistry	1-5
<b>PHCL</b>		
PHCL 5730	Toxicology I	3
PHCL 5750	Toxicology II	3
PHCL 5990	Problems In Pharmacology	1-6
PHCL 6400	Cannabis Science – Risks & Benefits	3
PHCL 6600	Seminar In Pharmacology	1
<b>PHPR</b>		
PHPR 5000	Residency and Postgraduate Training Preparation	1
PHPR 5010	Advanced Evidence Based Medicine	2
PHPR 5590	Readings in Access and Cultural Competence	2
PHPR 5710	Selected Topics In Pharmaceutical Technology	2-3
PHPR 5720	Pharmaceutical Rate Processes	3
PHPR 5810	FINANCE AND PERSONAL PLANNING FOR PHARMACISTS	2
PHPR 5910	Drug-Induced Diseases	1
PHPR 5990	Problems In Pharmacy Practice	1-6
PHPR 6010	Leadership and the Military Healthcare Professional	2
PHPR 6400	Topics in Internal Medicine	2
PHPR 6410	Leadership: Principles and Practice	2
PHPR 6530	Research Methods In Pharmacy Practice	2
PHPR 6600	Seminar In Administrative Pharmacy	1
PHPR 6670	Chemical Dependency And The Pharmacist	3
PHPR 6700	Special Topics in Diabetes Care	2
PHPR 6950	Seminar In Industrial Pharmacy	1
PHPR 6980	Special Topics	1-5
<b>PHM</b>		

PHM 6400	Physical and Mental Effects of Psychoactive Substances	2
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Additional Recommendations		
BUAD 6100	Accounting For Decision Making	3
BUAD 6200	Corporate Finance	3
BUAD 6300	Strategic Marketing And Analysis	3
BUAD 6400	Results-Based Management	3
BUAD 6500	International Business	3
BUAD 6600	Supply Chain Management	3
BUAD 6800	Information Technology And E-Business	3
BUAD 6900	Strategic Management Capstone	3
CHEM 6510/8510	Protein Chemistry	4
COUN 6240	Diagnosis And Mental Health	4
COUN 6470/8470	Drugs And Mental Health Counseling	4
COUN 8460	Substance Abuse Counseling	4
EDP 5230	Adult Development	3
PUBH 6080	Social Determinants of Health	3
PUBH 6330	Public Health and Aging	3
PUBH 6430	Community Mental Health	3
PUBH 6520	Public Health Nutrition	3
SOC 5160	Health And Gender	3

- PLO 1.1 Learner - Seek, analyze, integrate, and apply foundational knowledge of medications and pharmacy practice (biomedical; pharmaceutical; social, behavioral, administrative; and clinical sciences; drug classes; and digital health).
- PLO 2.1 Problem-solver - Use problem solving and critical thinking skills, along with an innovative mindset, to address challenges and to promote positive change.
- PLO 2.2 Communicator - Actively engage, listen, and communicate verbally, nonverbally, and in writing when interacting with or educating an individual, group, or organization.
- PLO 2.3 Ally - Mitigate health disparities by considering, recognizing, and navigating cultural and structural factors (e.g., social determinants of health, diversity, equity, inclusion, and accessibility) to improve access and health outcomes.
- PLO 2.4 Provider - Provide whole person care to individuals as the medication specialist using the Pharmacists' Patient Care Process
- PLO 2.5 Advocate - Promote the best interests of patients and/or the pharmacy profession within healthcare settings and at the community, state, or national level.
- PLO 2.6 Steward - Optimize patient healthcare outcomes using human, financial, technological, and physical resources to improve the safety, efficacy, and environmental impact of medication use systems.
- PLO 2.7 Collaborator - Actively engage and contribute as a healthcare team member by demonstrating core interprofessional competencies.
- PLO 2.8 Promoter - Assess factors that influence the health and wellness of a population and develop strategies to address those factors.
- PLO 2.9 Leader - Demonstrate the ability to influence and support the achievement of shared goals on a team, regardless of one's role.

- PLO 3.1 Self-aware - Examine, reflect on, and address personal and professional attributes (e.g., knowledge, metacognition, skills, abilities, beliefs, biases, motivation, help-seeking strategies, and emotional intelligence that could enhance or limit growth, development, professional identity.
- PLO 3.2 Professional - Exhibit attitudes and behaviors that embody a commitment to building and maintaining trust with patients, colleagues, other health care professionals, and society