

## COLLEGE OF PHARMACY AND PHARMACEUTICAL SCIENCES

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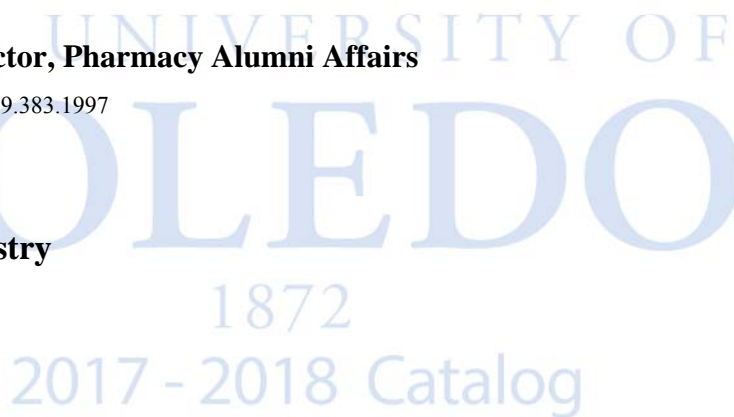
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**Mission Statement**

The mission of the College of Pharmacy and Pharmaceutical Sciences (CPPS) is to educate students to become pharmacists and pharmaceutical scientists, while advancing pharmaceutical knowledge. Guiding principles are personal integrity, respect for humanity and human diversity, and professionalism.

**Accreditation**

The CPPS holds membership in the American Association of Colleges of Pharmacy, is recognized as an institution in good standing by the Ohio State Board of Pharmacy, and is accredited by the Accreditation Council for Pharmacy Education (ACPE).

**Programs in Pharmacy and the Pharmaceutical Sciences**

The CPPS prepares students for careers in the pharmaceutical sciences and the profession of pharmacy. Those who do not seek professional licensure may work in the medical, legal and biomedical professions. Those who enter the profession of pharmacy provide direct patient care services.

**The curriculum as outlined in the current catalog is subject to modifications with immediate implementation to keep pace with changing trends in pharmaceutical education and in accordance with accreditation standards. Pre-Professional and Professional division curricular requirements for the degree programs will be those listed in the catalog for the years in which the student enters the respective division. The CPPS reserves the right to change its policies and procedures at any time. These changes will be binding on the date they are approved by faculty action.**

## **Doctor of Pharmacy – Pharmacy Licensure Program**

The program of study leading to pharmacy licensure for entering freshmen 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 required pre-professional course work prior to entering the professional division. Following the completion of a core set of required courses, students will apply to the professional division during their second year. Admission to the professional division of the college (third year or P1 year) is competitive.

## **Pharmaceutical Sciences**

The CPPS offers a four-year bachelor of science in pharmaceutical sciences (B.S.P.S.) degree to prepare students for a variety of careers in the pharmaceutical and biotechnological industries. Students seeking the degree will need to complete two years of required pre-professional coursework prior to entering the professional division. Following the completion of a core set of required courses, students will undergo a progression review during their second year.

## **Pharmacy Graduate Degree Programs**

The CPPS offers several graduate degrees in the pharmaceutical sciences – the Master of Science in Pharmaceutical Sciences degree with program options in pharmacology/toxicology, industrial pharmacy and health outcomes and socioeconomic sciences; the Master of Science in Medicinal Chemistry degree; the doctor of philosophy in experimental therapeutics, and the doctor of philosophy in medicinal chemistry degree. Students should contact the CPPS for admission and curricular requirements.

## **Admission to the College**

### **Non-Discrimination Policy**

The University of Toledo is committed to a policy of equal opportunity in education, employment, membership and contracts, and no differentiation will be made based on race, color, religion, sex, age, national origin, sexual orientation, veteran status or the presence of a disability. The University will take affirmative action as required by federal or state law.

### **Direct-from-High School Students**

The minimum criteria for Direct-from-High School students are a high school grade point average (GPA) of 2.50 –OR– a composite ACT of 20 -OR- SAT 950 - (combined reading & math; test dates prior to March 2016) *or* 1030 new SAT (test dates March 2016 and later). All undergraduate students in the CPPS will be considered pre-p division students until admitted to the professional divisions of the Pharm.D. or B.S.P.S. programs. For the entry-level Pharm.D. program, the CPPS limits student enrollment into the professional division (third year or P1 year) in accordance with its facilities.

### **Contingent Admission**

Academically exceptional high school graduates may be offered contingent admission to the professional division of the Pharm.D. or the B.S.P.S. programs. Automatic admission to the P1 year of the curriculum will be contingent on successful completion of the pre-professional curriculum, while meeting specific standards.

### **Early Admission**

Academically exceptional direct-from-high school first year students who are enrolled at UT may be offered early admission to the professional division of the Pharm.D. program. Automatic admission to the P1 year will be contingent on successful completion of the pre-professional curriculum while meeting specific standards.

## **Change-of-College Students**

In order for a student to change from another college within The University of Toledo to the CPPS, the student must have a UT cumulative grade point average (GPA) of at least 2.7 and be in good standing at the University.

## **Transfer Students**

In order for a student to transfer from other Ohio universities into the pre-professional division of any of the baccalaureate programs of the CPPS, the student must have a higher education cumulative grade point average (GPA) of at least 2.7 (this is based on all letter grades attained at all institutions of higher learning and uses the point average scale of A equaling 4 points), be in good standing at the university, and be eligible to return. The student may be required to take placement tests in chemistry and/or math. Students with course work from non-Ohio institutions will be evaluated on an individual basis. The student may be asked to supply course descriptions and syllabi so that course equivalencies can be determined.

- **Pharm.D.**

Transfer students meeting the eligibility requirements may apply directly to the PharmD program through PharmCAS. Transfer students interested in the PharmD program but who do not meet the requirements may enroll in the pre-professional division. Contact an academic advisor for more information.

- **BSPS**

Transfer students wishing to enroll in the BSPS program may be eligible to apply for direct admission to the professional division. Contact an academic advisor for more information.

## **GED**

Applicants with GED scores equal to or greater than 170 for each of the four (4) subject scores will be eligible for admission into the CPPS.

## **TOEFL Requirements**

- **PharmD**

All international students, regardless of graduating from a U.S. high school, and students who are U.S. citizens or permanent residents and did not graduate from a U.S. high school are required to submit an internet-based TOEFL with the following minimum criteria prior to application to the professional division of the PharmD program:

- 1) A minimum total score of 80 iBT, **and**
- 2) A minimum score of 18 in each of the four sub-categories of the iBT (reading, listening, speaking, and writing)

- **Pre-professional & BSPS**

International students entering the Pre-professional or BSPS Programs will follow The University of Toledo's TOEFL requirements.



## **Entrance into the Professional Division Programs**

There are many avenues to enter the Professional Division programs. Please be sure to follow the specific instructions for the program and year in which you will enter the professional division. Contact a pre-professional division advisor for guidance as needed. The only pharmacy courses a pre-professional student is permitted to take through the CPPS are PHPR 1000 and 2040; and PHCL 2220, 2600, 2610, 2620; and 2900 and MBC 2960, until final admission to the professional divisions is achieved.

## **General Criteria for Admission/Progression to the Professional Division of the BSPS**

### **Program**

Eligible students may apply directly to the professional division of the BSPS program. Current CPPS pre-professional students wishing to matriculate to the professional division of the BSPS program will undergo a progression review. All persons wishing to enter the professional division of the BSPS program must meet the following criteria.

### **Eligibility for Application/Progression Review**

To be eligible to apply for admission or for progression review into the BSPS professional division, the following (or their equivalents) must be completed:

BIOL 2170 and 2180

CHEM 1230, 1240, 1280, 1290, 2410 and 2460

MATH 1850

PHYS 1750 or 2070

A minimum 2.7 cumulative GPA. Students who have a cumulative GPA  $\geq 2.5$  but  $< 2.7$  will be reviewed by program administrators, and a decision made to admit, to admit conditionally, or to deny admission until the minimum GPA is achieved.

### **Application/Progression Review**

Applicants for direct admission into the B.S.P.S. programs should contact the Director of the BSPS Programs for details. Students requesting a progression review should contact the Office of Student Affairs for details.

### **Final Admission/Progression**

For final admission/progression into the professional division, the following (or their equivalents) must be completed:

BIOL 2170 and 2180

CHEM 1230, 1240, 1280, 1290, 2410, 2420, 2460 and 2470

MATH 1850

PHCL 2610 or KINE 2560 and 2570

PHYS 1750 or 2070/2080

ENGL 1110 and ENGL 1130

Minimum 2.7 GPA (cumulative) following the spring and, if applicable, summer semesters. Students who have a cumulative GPA  $\geq 2.5$  but  $< 2.7$  will be reviewed by program administrators, and a decision made to admit, to admit conditionally, or to deny admission until the minimum GPA is achieved.

### **Evaluation**

Each application will be evaluated on the basis of the applicant's cumulative GPA.



## **General Criteria for Admission to the Professional Division of the Doctor of Pharmacy Program**

Success as a pharmacist requires excellence in academic performance in addition to well-developed verbal and written communication skills. Therefore, the College uses several measures to evaluate these attributes in applicants. The admissions process is based on a holistic review that is in alignment with the College mission.

The Pharmacy College Aptitude Test (PCAT) provides a standardized method of assessing the applicant's skills needed for success in a pharmacy program. Academic achievement as assessed by cumulative GPA and science GPA, as defined in the College Catalog, and communication skills, as measured by the PCAT writing score and interview, are other key components evaluated in the application review process. Although each component serves a unique purpose, none of these is a sole determinant of admission and the predictive value of all components is continually evaluated.

The PCAT is required for admission to the Pharm.D. professional division, with the exception of those contingent admit students and early admission students who have met the specified requirements to the professional division.

Students are admitted to the professional divisions for the fall semester only. The number of students who receive final acceptance into the professional divisions will be limited to the space available. Because the number of applicants usually exceeds the number of spaces available, students are admitted on the basis of the following general criteria.

### **Fall 2018 Pharm.D. Program Admission**

Beginning with Fall 2018 admission to the professional division of the Pharm.D. program, The University of Toledo will utilize The Pharmacy College Application Service (PharmCAS), a centralized application system. Two recommendations must also be submitted as a component of the PharmCAS application. The recommendations may be from professors, employers, clergy, close family friends and health professionals (pharmacist, dentist, and physician), or others. Recommendations from relatives or University of Toledo CPPS faculty or staff are not acceptable. In addition to the PharmCAS application, applicants must also submit a supplemental application directly to The University of Toledo CPPS through the Professional Division Admissions website. There are several pathways for application to the Pharm.D. program. They are described as follows.

- **Contingent Admission (0+6)**

This pathway is designed for highly qualified high school seniors applying to The University of Toledo. During their second year at UT, students continuing to meet the Contingent Admission criteria will be required to submit a PharmCAS application and supplemental application.

#### **Eligibility for Application**

To be eligible to apply through the "Contingent Admission" pathway, the following (or their equivalents) must be completed:

High school GPA of 3.75 or higher

ACT composite score of 29 or higher (SAT >1300)

The PCAT is NOT required to apply through the Contingent Admission pathway.

#### **Evaluation**

Each application will be evaluated on the basis of the applicant's:

High school GPA of 3.75 or higher

ACT composite score of 29 or higher (SAT >1300)

Essay (2 hours, online)

Phone Interview

### **Final Admission**

For final admission into the professional division, the following (or their equivalents) must be completed:

BIOL 2170 and 2180  
CHEM 1230, 1240, 1280, 1290, 2410, 2420, 2460 and 2470  
MATH 1850 (or 1750 and 1760)  
MATH 2640 (or 2600)  
PHCL 2610 (or KINE 2560 and 2570)  
PHYS 1750 (or 2070 and 2080)  
ENGL 1110 (or HON 1010)  
ENGL 1130 (or HON 1020 or ENGL 2950)

A minimum of 60 earned semester hours

Science AND cumulative GPAs of 3.5 or higher in pre-professional coursework at the end of the sophomore (second year) fall semester at UT

Semester GPA of 2.0 or higher during sophomore (second year) spring and summer semesters at UT

Must "pass" all remaining required coursework

Must have a valid Social Security number

Must complete the health requirements as defined by The University of Toledo CPPS

- **Early Admission (1+5)**

This pathway is designed for highly qualified direct-from-high school first-year UT students who did not receive Contingent Admission (did not apply or not awarded). Early Admission applicants will be required to submit a PharmCAS application and a supplemental application.

### **Eligibility for Application**

To be eligible to apply through the "Early Admission" pathway, the following (or their equivalents) must be completed:

Science AND cumulative GPAs of 3.75 or higher at the end of the first year at UT

Applicant must be a full-time student each academic semester (Fall and Spring of first college year).

The following required science-GPA courses and corresponding labs MUST have been taken at UT during the first year as a UT student or credit earned in high school:

MATH 1850 (or MATH 1750 and 1760)  
BIOL 2170 and 2180  
CHEM 1230, 1280, 1240, and 1290  
PHCL 2610 (or KINE 2560)

The PCAT is NOT required to apply through the Early Admission pathway.

### **Evaluation**

Each application will be evaluated on the basis of the applicant's:

Cumulative GPA

Science GPA using the following courses (only first attempt included):

MATH 1850 (or MATH 1750)  
BIOL 2170  
CHEM 1230 and 1240  
PHCL 2610 (or KINE 2560)

Comprehensive communication review

### **Final Admission**

For final admission into the professional division, the following (or their equivalents) must be completed:

BIOL 2170 and 2180  
CHEM 1230, 1240, 1280, 1290, 2410, 2420, 2460 and 2470  
MATH 1850 (or MATH 1750 and 1760)  
MATH 2640 (or MATH 2600)  
PHCL 2610 (KINE 2560 and 2570)PHYS 1750 (or 2070 and 2080)  
ENGL 1110 (or HON 1010)  
ENGL 1130 (or HON 1020 or ENGL 2950)

A minimum of 60 earned semester hours

Science AND cumulative GPAs of 3.5 or higher in sophomore fall courses

Science AND cumulative GPAs of 3.0 or higher in sophomore spring and summer courses

Must have a valid Social Security number

Must complete the health requirements as defined by The University of Toledo CPPS

Earn C or higher in the following courses which must be taken at UT or credit earned in high school:

CHEM 1280, 1290, 2410, 2420, 2460 and 2470  
BIOL 2180  
PHYS 1750 (or 2070 and 2080)  
MATH 2640 (or MATH 2600)  
PHCL 2610 (or KINE 2560 and 2570)

- **Traditional Admission with Guaranteed Interview (2 + 4)**

This pathway is designed for any college student who meets the following admission requirements.

### **Eligibility for Application**

To be eligible to apply through the "Traditional Admission with Guaranteed Interview" pathway, the following (or their equivalents) must be completed by the end of Fall semester sophomore (2<sup>nd</sup> year):

Science AND cumulative GPAs of 3.50 or higher

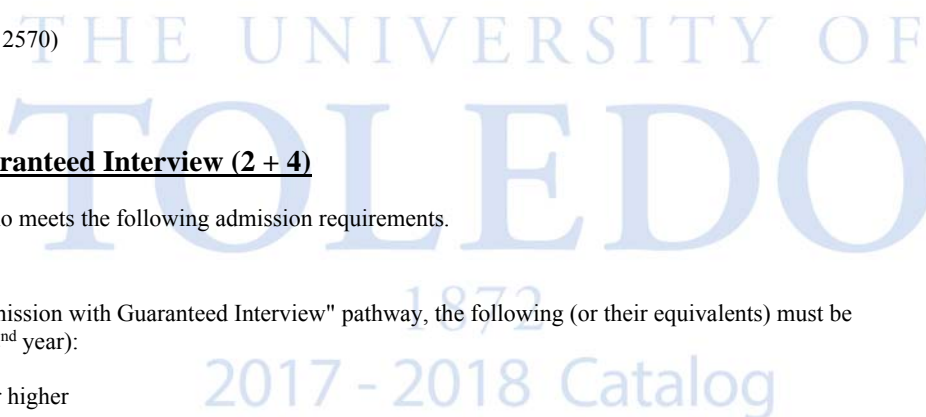
The following required science courses MUST have been completed:

MATH 1850 (or MATH 1750)BIOL 2170 and 2180  
CHEM 1230, 1280, 1240, 1290, 2410, and 2460  
PHCL 2610 (or KINE 2560)  
PHYS 1750 or 2070

PCAT score  $\geq$  60<sup>th</sup> percentile AND writing score of 3 or higher

Completed PharmCAS application and supplemental application

A minimum of 44 earned semester hours





### **Evaluation**

Each application will be evaluated on the basis of the applicant's:

Cumulative GPA

Science GPA in the following specified courses:

BIOL 2170

CHEM 1230, 1240 and 2410

MATH 1850 or 1750

PHYS 1750 or 2070

PHCL 2610 (or KINE 2560)

PCAT Score

Personal interview

### **Final Admission**

For final admission into the professional division, the following (or their equivalents) must be completed:

BIOL 2170 and 2180

CHEM 1230, 1240, 1280, 1290, 2410, 2420, 2460 and 2470

MATH 1850 (or MATH 1750 and 1760)

MATH 2640 (or MATH 2600)

PHCL 2610 (or KINE 2560 and 2570)

PHYS 1750 or 2070/2080

ENGL 1110 (or HON 1010)

ENGL 1130 (or HON 1020 OR ENGL 2950)

A minimum of 60 earned semester hours

Minimum 2.0 GPA (cumulative and semester) for the spring and, if applicable, summer semesters

Must have a valid Social Security number

Must complete the health requirements as defined by The University of Toledo CPPS

- **Traditional Admission (2+4)**

This pathway is designed for any college student who meets the following admission requirements.

### **Eligibility for Application**

To be eligible to apply through the "Traditional Admission" pathway, the following (or their equivalents) must be completed:

Science AND cumulative GPAs of 3.00 or higher

The following required science courses MUST have been completed by the end of Fall semester of sophomore (2<sup>nd</sup> year):

MATH 1850 (or MATH 1750)

BIOL 2170 and 2180

CHEM 1230, 1280, 1240, 1290, 2410, and 2460

PHCL 2610 (or KINE 2560)

PHYS 1750 or 2070

PCAT score  $\geq$  30<sup>th</sup> percentile AND writing score of 2 or higher

Completed PharmCAS application and supplemental application

A minimum of 44 earned semester hours

### **Evaluation**

Each application will be evaluated on the basis of the applicant's:

Cumulative GPA

Science GPA in the following specified courses:

CHEM 1230, 1240 and 2410

BIOL 2170

MATH 1850 or 1750

PHYS 1750 or 2070

PHCL 2610 (or KINE 2560)

PCAT Score(s)

Personal interview at the discretion of the committee

The admissions committee will use the better grade of the first two of all attempts for any science course used in the calculation of the science GPA. This rule applies to all applicants, including transfer students. All transfer or quarter courses equivalent to these specified courses will be evaluated for their respective equivalent semester hours. If a student has taken fewer than 30 quality hours at The University of Toledo, the higher education GPA will be used in the evaluation in place of the UT cumulative GPA, if the higher education GPA value is less than the UT cumulative GPA. If the higher education GPA is greater than the UT cumulative GPA, the latter will be used.

### **Final Admission**

For final admission into the professional division, the following (or their equivalents) must be completed:

BIOL 2170 and 2180

CHEM 1230, 1240, 1280, 1290, 2410, 2420, 2460 and 2470

MATH 1850 (or MATH 1750 and 1760)

MATH 2640 (or 2600)

PHCL 2610 (or KINE 2560 and 2570)PHYS 1750 (or 2070 and 2080)

ENGL 1110 (or HON 1010)

ENGL 1130 (or HON 1020 OR ENGL 2950)

A minimum of 60 earned semester hours

Minimum 2.0 GPA (cumulative and semester) for the spring and, if applicable, summer semesters

Must have a valid Social Security number

Must complete the health requirements as defined by The University of Toledo CPPS

## **CPPS Honors Program**

The CPPS offers an Honors Program for eligible students in all of its undergraduate programs as part of the Jesup Scott Honors College. Highly qualified students entering the University in the CPPS will be considered for entry into honors courses and honors sections of major courses offered throughout the undergraduate curriculum. Decisions regarding entry of students into the Honors College will be made after evaluation of the honors application by the Honors College. Normally, entering students with an ACT composite score of 25 and above (or SAT equivalent), coupled with a 3.50/4.00 high school GPA, will be considered for entry into honors courses. During the first two years of study, the CPPS offers courses that orient the student toward the profession of pharmacy and the pharmaceutical sciences. Many honors students take much of their honors course work (required and elective courses) during the first two years of the curriculum.

A variety of required and elective courses also are offered with honors sections in the professional division. A specific honors seminar course and an honors thesis option are offered to fulfill the requirements for graduation with the Honors College medallion. These courses also can fulfill requirements for electives within the major.

The Bachelor of Science in Pharmaceutical Sciences with the Honors College medallion is attainable by all students who complete at least 33 semester hours of honors course work with a grade of C or better and who have a minimum cumulative GPA of 3.3. In addition, five to eight hours of the 33 must be taken within the honors thesis project and honors seminar. These courses are to be taken within the department of medicinal and biological chemistry, pharmacology and experimental therapeutics, or pharmacy practice. Graduation with departmental honors is also available to students who are not members of the Honors College, but who meet departmental honors requirements. These departmental honors requirements are a GPA of 3.2 or higher and completion of eight hours of honors course work in one department, including the honors thesis and seminar.

## **Academic and Conduct Policies**

The CPPS adheres to all of The University of Toledo policies and procedures. Please refer to the UT Policy web site for additional information on academic and conduct policies governing all students enrolled at the University. In any case in which University, college and/or departmental policies conflict, the most stringent policy applies, unless waived by the college. Students should consult with the college for a complete listing of all policies and procedures specifically related to the CPPS.

## **Attendance Requirements**

Students in a professional school, as responsible individuals, are expected to attend all class meetings. The maximum number of permissible absences in a course is at the discretion of the individual faculty member. The penalty for excessive absences will be determined by the faculty member in accordance with the University's Missed Class Policy.

## **Withdrawal, GPA Recalculation and Audit Policies**

Refer to the University General Academic Policies for Withdrawal, GPA Recalculation and Audit policies that apply to all students. Withdrawal from an experiential course for which a final grade has already been determined will not be permitted.

## **Pass/No Credit (P/NC) Grade Option**

Refer to the University General Academic Policies for General Academic Policies that apply to all students. P/NC grading is not available for courses taught in the CPPS. In addition to courses for which P/NC grading is used exclusively, a student may elect P/NC grading for an additional seven credit hours, excluding course work in the natural sciences (biology, chemistry, physics and mathematics). These seven P/NC hours are applicable only to courses in English composition, humanities/fine arts, diversity studies and social sciences. Once the petition is filed, the request is irrevocable.

## **Technology Requirements**

Specific computer hardware/mobile devices and software are required of CPPS students and are described in the Student Handbook.

## **Personal Fitness**

The emotional and psychological stability of those practicing or preparing to practice in pharmacy or the pharmaceutical sciences is considered to be very important for the proper performance of professional responsibility. The faculty of the CPPS recognizes that, if a student exhibits behavior suggesting an emotional or psychological abnormality bearing a reasonable relation to that student's ability to function competently in health-care delivery systems, experiential education, and professional employment, such behavior may present a hazard not only to the student, but also to patients, coworkers and clients. If any behavior pattern provides reason to believe that a student's psychological or emotional state may have rendered that student incompetent or unsafe, the dean of the college shall meet with that student and attempt to resolve the situation by referral to the University Health Service, University Counseling Center and/or withdrawal from the pharmacy program.

## **Ethical Responsibility**

The most serious offense with which pharmacy students may become involved is the misuse of and/or dependence upon dangerous drugs. The CPPS views the admitted or proven personal abuse of such drugs, their transmittal or sale to other individuals, or the use of drug documents to illegally obtain controlled or legend drugs as unprofessional conduct, which may result in dismissal from the CPPS. In addition, boards of pharmacy may revoke the internship license and/or deny licensure for various drug offenses. Drug abuse in any form and/or misuse of drug documents must be avoided.

## **Student Code of Professional Conduct**

### **PURPOSE**

The Student Code of Professional Conduct gives general notice of expected and prohibited conduct and of the sanctions to be imposed if prohibited conduct occurs. The Student Code of Professional Conduct should be read broadly, and is not designed to define misconduct in exhaustive terms. The Student Code of Professional Conduct specifies the rights and responsibilities of the students, student organizations, the college, and the rights of other parties to the procedure.

Students and student organizations are required to engage in responsible social and professional conduct that reflects credit upon the CPPS community and to model good citizenship in any community. Actions by students or student organizations, which interfere with the orderly functions of the college, or actions, which endanger the health or safety of members of the college community, will not be tolerated.

Delegation of Authority. The dean of the CPPS or designee shall administer and implement this policy, including the promulgation of the standards of conduct, to be published and distributed as "The Student Code of Professional Conduct," with procedures and standards governing student conduct at UTCPPS. The Professional Conduct Committee is authorized to hear each matter and provide a final decision as to whether the code has been violated and a sanction if warranted. The dean of the College will assure that the sanction is implemented.

Application. This policy, along with the University of Toledo "The Student Code of Conduct" (see [http://www.utoledo.edu/policies/main\\_campus/student\\_life/pdfs/3364\\_30\\_04\\_Student\\_code\\_of\\_conduct.pdf](http://www.utoledo.edu/policies/main_campus/student_life/pdfs/3364_30_04_Student_code_of_conduct.pdf)), applies to all students and student organizations of the CPPS. In areas of overlap, this policy supersedes the University of Toledo "The Student Code of Conduct".

## **Licensure Requirement**

A valid Ohio Intern license is required of all students entering the professional division of the Pharm.D. program. Any P1 student who does not obtain a valid Ohio intern license by December 31st of the P1 year will be withdrawn from all spring semester courses and will not be allowed to register for or take classes until a valid Ohio intern license is obtained. Depending upon the circumstances and length of time needed to resolve the issue, failure to obtain a valid Ohio intern license may result in forfeiture of the student's seat in the P1 class, necessitating reapplication to the professional division.

In addition any student in the professional division of the Pharm.D. program who does not annually renew his/her license before September 15th will be withdrawn from all courses effective immediately. Depending upon the circumstances and length of time needed to resolve the issue, failure to renew an Ohio intern license may result in forfeiture of the student's seat in the Pharm.D. class, necessitating reapplication to the professional division.

## **Academic Performance Standards**

Please refer to the [UT Policy web site](#) for additional information on academic policies.

The [Academic Performance Standards](#) as outlined in the current catalog are subject to modifications with immediate implementation to keep pace with changing trends in pharmaceutical education and in accordance with accreditation standards.

### **Requirements for Academic Progression -- Pre-Professional Program**

#### **Policies**

##### **1. Good Academic Standing**

- a. The College of Pharmacy and Pharmaceutical Sciences defines "good academic standing" for Pre-Professional students in the following manner: a minimum term and cumulative GPA of 2.00
- b. To hold an office in a CPPS organization or represent the CPPS, a student enrolled in the CPPS must be in "good academic standing."

##### **2. Academic Probation**

- a. A student will be placed on Academic Probation for earning a term or cumulative GPA < 2.00
- b. In addition to academic probation, a student earning a term GPA < 1.00 may be subject to suspension from the CPPS and/or University for one (1) term, not including the summer terms. (See suspension below)
- c. Students will remain on academic probation until the cumulative GPA is raised to 2.00 or greater or qualifies for suspension.

##### **3. Suspension**

- a. Any student who earns a term GPA < 1.00 must meet with their CPPS pre-professional academic advisor and the Associate Dean of Main Campus Student Affairs *prior to the start of the next term*. If a student earning a term GPA < 1.00 does not meet with their academic adviser and the Associate Dean of Main Campus Student Affairs *prior to the start of the next term*, the student will be suspended for a period of one (1) term, not including summer terms.
- b. Any student on academic probation who earns a term GPA of < 2.00 will be suspended for a period of one (1) term, not including summer terms.
- c. In lieu of suspension from the University, a student who is suspended by CPPS policy, but remains eligible to continue at the University based on current university policy, may defer suspension as long as they agree to each of the following:
  - i. Register for a plan of study put forth by the academic adviser
  - ii. Notify the academic adviser prior to dropping or adding any courses
  - iii. Transfer to University College or another program of their choosing at The University of Toledo, whichever they become eligible to transfer to first



4. Readmission from Suspension
  - a. Students serving suspension have the right to petition for readmission to the CPPS. A student must request readmission via a written petition to the chair of the APC by the designated time.
  - b. Any student returning from suspension will be placed on probation. While on probation, the student must earn a term GPA of 2.00 or better and a grade of D+ or better in all subsequent coursework or the student will be subject to dismissal.
5. Dismissal
  - a. Any student returning from suspension (and placed on probation) who earns a term GPA < 2.00 and/or a course grade of D or less, will be dismissed from the CPPS.
  - b. In lieu of dismissal from the University, a student who is dismissed by CPPS policy, but remains eligible to continue at the University based on current university policy, may defer suspension as long as they agree to each of the following:
    - i. Register for a plan of study put forth by the academic adviser
    - ii. Notify the academic adviser prior to dropping or adding any courses
    - iii. Transfer to University College or another program of their choosing at The University of Toledo, whichever they become eligible to transfer to first
6. GPA recalculation for undergraduate courses will be allowed, in accordance with the policies of The University of Toledo.
7. Petition for review of Suspension/Dismissal by APC
  - a. A student who is suspended or dismissed may petition the APC to appeal the decision to suspend or dismiss. If the petition is accepted, the college will determine the conditions for academic progression under which the student will be permitted to continue taking classes.
  - b. A student must submit the petition within one month of the date of suspension/dismissal.
  - c. If a student is allowed to continue and does not meet expectations for academic progression, dismissal from the College of Pharmacy and Pharmaceutical Sciences will result.
8. Appeal of Suspension or Dismissal to Dean
  - a. A student may appeal a suspension or dismissal to the Dean of the CPPS. (Refer to CPPS Appeal Policy: 3364-83-05)
  - b. Appeal will only be heard after a petition for review of suspension/dismissal has been submitted and denied by the APC (See #7 above)

**Requirements for Academic Progression – Professional Division Students in the Bachelor of Science in Pharmaceutical Sciences program (Pharmacology/Toxicology, Medicinal Chemistry, Cosmetic Sciences and Formulation Design, Pharmaceutics, and Pharmacy Administration)**

**Policies**

1. Good Academic Standing
  - a. The College of Pharmacy and Pharmaceutical Sciences defines “good academic standing” for professional division students in the Bachelor of Science in Pharmaceutical Sciences program (Pharmacology/Toxicology, Medicinal Chemistry, Cosmetic Sciences and Formulation Design, Pharmaceutics, and Pharmacy Administration) in the following manner: a minimum term and cumulative GPA of 2.00
  - b. To hold an office in a CPPS organization or represent the CPPS, a student enrolled in the CPPS must be in “good academic standing.”
2. Academic Probation
  - a. A student will be placed on Academic Probation for the following:
    - i. Earning a semester or cumulative GPA < 2.00
    - ii. Earning a *semester* GPA < 1.00; this performance may lead to suspension (see section on suspension below) from the University without a preliminary probationary semester.
  - b. Any student on Academic Probation for two of three consecutive semesters in attendance may be suspended (see section on suspension below) from the University.
  - c. Students will remain on Academic Probation until the cumulative GPA is raised to 2.00 or greater.
3. Suspension
  - a. Any student on academic probation who earns a term or cum GPA of < 2.00 or grade of F may be suspended for a period of one (1) semester, not including summer semesters.

- b. Any student who earns a *cumulative* GPA < 1.00 may be suspended for a period of one (1) semester, not including summer semesters.

4. Readmission from Suspension

- a. Students serving suspension have the right to petition for readmission to the CPPS. A student must request readmission via a written petition to the chair of the APC at least eight (8) weeks prior to the returning semester.
- b. A student returning from suspension will be placed on probation. The student must earn a term GPA of 2.00 or better and a grade of D- or better in all subsequent coursework or the student will be subject to dismissal.
- c. A student may appeal a suspension (Refer to CPPS Appeal Policy: 3364-83-05)
- d.

5. Dismissal

- a. Any student returning from suspension and earning a term GPA < 2.00 and/or a course grade of F will be dismissed from the CPPS.
- b. A student may appeal a dismissal (Refer to CPPS Appeal Policy: 3364-83-05)
- c.

6. GPA recalculation for undergraduate courses will be allowed, in accordance with the policies of The University of Toledo.

**Requirements for Academic Progression – Doctor of Pharmacy Program (Policy No. 3364-83-07)**

2. Good Academic Standing

- a. The College of Pharmacy and Pharmaceutical Sciences defines “good academic standing” for students enrolled in the Doctor of Pharmacy (PharmD) Program in the following manner:
  - i. Maintaining minimum required course cumulative GPA  $\geq 2.75$
  - ii. Earning grade of C or better in all required courses
- b. A grade below a C in any required course is unsatisfactory and will not be considered a passing grade for the course in the Pharm.D. curriculum (i.e., courses for which grades of less than a C are earned must be repeated).
- c. To hold an office in a CPPS organization or represent the CPPS, a student enrolled in the CPPS must be in “good academic standing.”

3. Academic Progression\*

- a. To advance to the P2 year, the student must earn the following:
  - i. A required course cum GPA  $\geq 2.75$
  - ii. A grade of C or better in all required courses
- b. To matriculate to the P3 year, the student must earn the following:
  - i. A required course cum GPA  $\geq 2.75$
  - ii. A grade of C or better in all required courses
- c. To advance to the P4 (APPE) year, the student must earn the following:
  - i. A required course cum GPA  $\geq 2.75$
  - ii. A grade of C or better in all required courses
- d. To graduate with a Doctor of Pharmacy degree from the UT-CPPS, the student must earn the following:
  - i. A required course cum GPA  $\geq 2.75$
  - ii. A grade of C or better in all required courses

\*Students not permitted to move on to the next professional year due to failure to meet academic requirements will be allowed to repeat previous coursework in an attempt to meet the necessary requirements for advancement.

4. Academic Probation

The following academic performance will lead to Academic Probation

- a. Earning a required course cum GPA < 2.75
- b. Earning a grade less than a C in required course.
- c. A student will remain on probation until he/she achieves academic good standing or is no longer enrolled in the program.
- d. Failure to pass a pharmacy practice experience or dismissal from a pharmacy practice experience (for reasons other than an action detrimental to patient care and/or to the clinical service).

#### 5. Dismissal

The following academic performance or circumstances will lead to dismissal from the Doctor of Pharmacy Program:

- a. Earning  $\geq 4$  grades less than a C on first attempt in required courses (P1-P3 years).
- b. Earning a required course term GPA  $< 2.00$
- c. Earning a required course cum GPA  $< 2.25$  (excluding the Fall P1 semester)
- d. Earning a grade  $< C$  in a repeated required course.
- e. Student no longer able to complete the program in the required six (6) calendar year time period from the initial enrollment semester – student's P1 Fall semester. (*See Policy 3364-83-04 Time for Completion of the Doctor of Pharmacy Program*)
- f. If dismissed from the Doctor of Pharmacy program, the student may continue to earn a BSPS degree if he/she has not already done so or transfer to other Colleges/Programs within the University as eligible.

The following experiential performance may make you eligible for dismissal:

- a. Any student on probation due to experiential performance who fails to pass a pharmacy practice experience or is dismissed from a pharmacy practice experience.

#### 6. Petition for Readmission after Dismissal

- a. A student who is dismissed may petition the APC for readmission. If the petition is accepted, the college will determine the conditions under which the student will be permitted to re-enroll.
- b. A student must submit the petition within one calendar year of the date of dismissal.\*
- c. If a student is readmitted and does not meet expectation for academic progression, permanent dismissal from the College of Pharmacy and Pharmaceutical Sciences will result.

#### 7. Appeal of Suspension or Dismissal to Dean

- a. A student may appeal a suspension or dismissal to the Dean of the CPPS. (Refer to CPPS Appeal Policy: 3364-83-05)
- b. Appeal will only be heard after a petition for review of suspension/dismissal has been submitted and denied by the APC (See #5 above)

*\*Time between dismissal and readmission will count toward "Time to completion of the PharmD Program (See Policy 3364-83-04 Time for Completion of the Doctor of Pharmacy Program)"*

#### 8. Pharmacy Required Course GPA calculation

- a. The pharmacy required course GPA will consist of all required professional program pharmacy core-curriculum undergraduate and post-baccalaureate coursework (see below).
- b. Required courses may not be repeated more than once.
- c. All required courses (first attempt and repeated) will be counted towards required course cumulative GPA, regardless of the University grade recalculation policy.
- d. A repeated required course grade, in which a student earned a grade of B or better on the first attempt, will not be included in the required course GPA.
- e. Neither undergraduate nor post-baccalaureate elective coursework will be counted towards pharmacy required course GPA.

#### 9. Matriculation

- a. To matriculate to the post B.S.P.S. portion (P3-P4) of the Doctor of Pharmacy program, the student must earn both of the following:
  - i. A required course cum GPA  $\geq 2.75$
  - ii. A grade of C or better in all required courses
- b. Students failing to achieve these two requirements will not matriculate and must do one of the following:
  - i. Retake required courses to demonstrate an improved aptitude for the material and seek matriculation with the next year's class.
  - ii. If eligible, graduate with a Bachelor of Science in Pharmaceutical Sciences (BSPS) degree. **However**, doing so would *prevent* the student from taking/retaking additional undergraduate courses towards achieving a PharmD degree, thus *ending* any opportunity to further pursue a PharmD degree at The University of Toledo.
  - iii. If eligible, consider transferring to one of the other five tracks (Pharmaceutics, Pharmacology/Toxicology, Pharmacy Administration, Medicinal and Biological Chemistry, or Cosmetic Sciences and Formulation Design) of the BSPS program.
  - iv. If eligible, change colleges within the University of Toledo or transfer to another institution.

Pharmacy Required Courses (used in calculation of pharmacy required course cumulative GPA)

**\*Required P1-P2 Level Courses**

MBC 3310	MBC 3320	MBC 3550	MBC3560	MBC 3800	MBC 3850	MBC 4300
PHCL 3700	PHCL 3720	PHCL 4700	PHCL 4720			
PHPR 3070	PHPR 3080	PHPR 3130		PHPR 3140	PHPR 3260	PHPR 3920
PHPR 3930	PHPR 4070	PHPR 4080	PHPR 4130	PHPR 4140	PHPR 4160	PHPR 4330
PHPR 4520	PHPR 4920	PHPR 4930				

**\*Required P3-P4 Level Non-APPE Courses**

MBC 5300	PHPR 5300	PHPR 6120	PHPR 6160	PHPR 6280	PHPR 6610
MBC 6320	PHPR 6070	PHPR 6130	PHPR 6250	PHPR 6310	PHPR 6920
PHCL 6320	PHPR 6080	PHPR 6140	PHPR 6260	PHPR 6340	

NOTE: PharmD electives (undergraduate or graduate) are not counted toward PharmD core-curriculum courses.

## **Appeal Procedure for Individual Final Course Grades**

All pre-professional division students in the college will follow the current UT undergraduate academic grievance policy. All M.S. and Ph.D. students in the college will follow the graduate student academic grievance policy.

### **Professional division (P1-P4) of CPPS appeals process for final course grades**

To initiate resolution of final course grade grievances, the student shall formally dispute the grade in writing to the faculty member responsible for assigning the grade. The written dispute should include the student's name and Rocket number, date, course number and section, semester, the specific issue in dispute, and the student's request for resolution. The written request should be delivered (email or hard copy) within 7 days of the grade posting. The faculty member then has 7 days in which to respond in writing (email or hard copy) back to the student.

If resolution is not achieved, the student may forward the written dispute (as described above and with the response of the faculty member) to the chair of the faculty member's department. The student has 7 days in which to appeal to the department chairperson following the receipt of the faculty member response. The department chairperson then has 7 days in which to respond in writing (email or hard copy) back to the student.

If resolution is still not achieved, the student may submit the same written dispute (as outlined above and with the response of the department chairperson) to the CPPS dean. The student has 7 days in which to appeal to the dean following the receipt of the department chairperson's response. The dean then has 7 days in which to respond in writing (email or hard copy) back to the student. The decision of the dean is final and without appeal.



## **Appeal Procedure for Academic Performance and Degree Progression for the CPPS**

### **Appeal Procedure for Academic Performance and Degree Progression (Policy 3364-83-05)**

#### (A) Appeal Procedure for Academic Performance and Degree Progression:

The Academic Performance Committee (APC) reviews and administers CPPS Academic Performance Standards, as outlined in the College's Catalog. In the case of all action taken by the APC, including probation, suspension, dismissal, and progression decisions, appeal is available to the student.

Appeal is limited to academic issues based on the following:

- A claim that the Academic Performance review and ruling process was not conducted as required by the Academic Performance policy.
- A claim that the sanction imposed is excessive for the academic performance issue.
- New information has become available that was not available at the time of the original decision.

The impact of commuting or excessive work hours will not be considered as a basis for appeal.

#### (1) Appeal Process

- To appeal APC decisions, the student shall formally dispute the decision in writing to the Dean of the CPPS. The letter of petition must be written in adherence to the business letter format and must include the student's name and Rocket number, phone number, current mailing address, date, semester, decision(s) in dispute, the specific issue regarding the decision(s) in dispute, and the student's statement of appeal that specifically identifies which of the three bases for appeal are being raised. A hard copy and email copy of the written request must be received by the Office of the Dean **by 5pm of the fifth business day** following email notification of the APC decision, or any further right to appeal is waived. Email subject line must read: "Appeal: [student name]"
- The Pharmacy Academic Progression Appeals Committee (PAPAC) will be convened to review the matter and advise on the dispute. The PAPAC's recommendations to the Dean are advisory. The committee will consist of the following members:
  - Associate Dean for Main Campus Student Affairs and Enrollment Management
  - Associate Dean for Health Science Campus Student Affairs and Diversity
  - Associate Dean of Graduate and Research Studies
  - At least one full-time faculty member who has been directly involved in the instruction of the student, but who was not involved in the disputed APC decision.
- The appeal review may include a hearing with the student. The student is permitted to have a faculty or staff member or a fellow CPPS student attend the hearing as his/her advisor, however these individuals may not participate in the proceedings. Legal counsel will not be permitted. Both the student and the APC will be permitted to make a statement and present any information pertinent to the matter before the Dean and/or PAPAC.
- The Dean will review all applicable evidence presented by the PAPAC, the student, and the APC and any other requested information.
- After completing such review, the Dean may ask for a meeting with the student
- The Dean will provide to the student a written notification of the decision on the appeal within ten business days of the receipt of the appeal petition from the student, unless circumstances warrant additional time for review, with sufficient notice provided to the student.
- The decision of the Dean is final and without appeal.



## (B) Pendency of Action

Generally, implementation of an academic dismissal of a student from the Doctor of Pharmacy program and/or the CPPS will be deferred until all the due process hearings and time for appeals made by the student have been exhausted. Students will be allowed to continue in CPPS didactic coursework pending the ruling on appeal(s). Students will **not** be permitted to continue in experiential education on site experiences during the appeal process. Assignments/Exams may be completed but will not be scored unless the appeal is accepted. If the appeal is denied, the student will be immediately administratively removed from registered coursework. Please note, the Dean of the CPPS or the Assistant/Associate Dean for Academic Affairs of the CPPS may impose immediate removal or restrictions on the student if the alleged academic conduct in any way concerns patient or public safety (including faculty, staff and other students).

## **Experiential Performance Standards**

The experiential series allows students to gain an appreciation of the role of the pharmacist through visiting actual pharmacy practice sites and participating in direct patient care activities. Throughout the course of the experiential series each student will be required to complete a number of health and regulatory requirements. These regulatory requirements must be originally completed and kept up to date at all times in order to remain in the experiential program. These requirements may include immunizations and other certain health documentation as well as licensures, certifications and background checks.

Specific details regarding the above requirements will be provided to all students upon admission into the Pharm.D. program and throughout the experiential series. Additional requirements and expectations will be included in the experiential manual. The experiential manual will be made available to all students on an annual basis. Students are responsible for reading, understanding and adhering to **all** policies and procedures outlined therein.

## **TIME IN PROGRAM POLICY**

To ensure provision of the most up-to-date and relevant pharmacy and pharmaceutical sciences education, all Doctor of Pharmacy degree requirements must be completed within six (6) years from the time the student first enrolls in the professional division (P1) of the Doctor of Pharmacy program. An approved leave of absence will justify an extension.

The Time to Doctor of Pharmacy Program Completion Policy can be found by clicking here [http://www.utoledo.edu/policies/academic/college\\_of\\_pharmacy/pdfs/3364-83-04.pdf](http://www.utoledo.edu/policies/academic/college_of_pharmacy/pdfs/3364-83-04.pdf).

## **Student Grievances**

Student complaints specifically related to Accreditation Council for Pharmacy Education (ACPE) standards should be submitted on the appropriate form to the CPPS Office of Student Affairs (Wolfe Hall Room 1227 or Frederic and Mary Wolfe Center, Health Education Building, Suite 155) in care of the associate dean for student affairs. Forms and a copy of the ACPE standards are available in the Office of Student Affairs and on the college website under **Current Student Links**. Students can also find the ACPE standards at the ACPE web site. The associate dean will meet with the dean of the College to review the complaint and consult with the student complainant and individuals involved. A formal response will be issued by the dean. If the issue is not resolved at the College level, the student complainant can submit the complaint directly to ACPE. In addition, a student may submit a complaint directly to ACPE without submission to the College. See <https://www.acpe-accredit.org/complaints/default.asp> for more information.

Student issues or complaints regarding specific courses should follow these steps when pursuing an academic grievance:

**STEP 1:** The student discusses the problem with the faculty member whom the student believes has taken improper action.

**STEP 2:** If resolution is not achieved, the student discusses the problem with the chair of the faculty member's department.

**STEP 3 (optional):** If the student wishes, the student may seek informal counsel from the president of student government:  
<http://www.utoledosg.org/>.

**STEP 4:** If resolution is still not achieved, the student discusses the problem with the dean of the college or the college representative responsible for dealing with student academic grievances.

**STEP 5:** If resolution is not achieved at the college level, the student needs to file a petition for academic grievance with the chair of the Student Grievance Council.

See <http://www.utoledo.edu/offices/provost/academicgrievance/undergraduate.html> for UT academic grievance timeframe and the written petition guidelines.

Please refer to the UT Policy web site for additional information on Policy #3364-71-05 or other academic policies:  
<http://www.utoledo.edu/policies/>

## **LEAVE OF ABSENCE POLICY**

A student enrolled in the Doctor of Pharmacy program who is in good academic standing or on academic probation (excluding those students eligible for suspension or dismissal from the CPPS) may request a leave of absence (LOA) for up to 12 months. All students approved for a LOA, regardless of the type of LOA, must also request and be approved if they wish to return from the LOA.

Please go to [http://www.utoledo.edu/policies/academic/college\\_of\\_pharmacy/pdfs/3364-83-06.pdf](http://www.utoledo.edu/policies/academic/college_of_pharmacy/pdfs/3364-83-06.pdf) for more information on the policy. To apply for a Leave of Absence (LOA), please go [here](#) to complete the application.

## **College Level Examination Program Credit (CLEP)**

The CPPS grants up to a maximum of 30 semester CLEP credits. Credits earned in the natural sciences and mathematics section of the CLEP examination will count toward the degree as free electives, but do not replace the requirement for any specific course in biology, chemistry, physics or mathematics. Credits earned with other sections of the CLEP examination will count only toward meeting other general education requirements.

## **Credit by Exam**

Refer to the University General Academic Policies for Credit by Exam policies that apply to all students.

## **Undergraduate and Professional Programs of Study**

The student is responsible for the correct selection of the program of study each semester and for the fulfillment of the requirements given here. Although advisers will assist wherever possible, the final responsibility rests with the student. The CPPS reserves the right to change its policies and procedures at any time. These changes will be binding on the date they are approved by faculty action. Courses taken at other colleges of pharmacy will not substitute for required professional division courses. The only pharmacy courses a pre-professional student is permitted to take through the CPPS are PHPR 1000 and 2040 and PHCL 2220, 2600, 2620, 2610, and 2900, and MBC 2960. Only students admitted to the professional division will be allowed to take 3000- or 4000-level courses in the college.

## **Degree Requirements**

**The curriculum as outlined in the current catalog is subject to modifications with immediate implementation to keep pace with changing trends in pharmaceutical education and in accordance with accreditation standards.**

## **Bachelor of Science in Pharmaceutical Sciences Degree Requirements**

In response to the increasing demand for scientists, researchers, administrators, and professional sales representatives in the pharmaceutical fields, The University of Toledo CPPS offers the Bachelor of Science in Pharmaceutical Sciences degree program as one of the first in Ohio. The Bachelor of Science in Pharmaceutical Sciences degree is a four-year baccalaureate program. Pharmaceutical sciences represent the collective basic sciences that underlie pharmacy. There are five majors under this degree program – medicinal and biological chemistry, pharmacology/toxicology, pharmaceuticals, cosmetic science and formulation design, and pharmacy administration.

This degree program is designed for students who wish to pursue careers related to the pharmaceutical industry, pharmaceutical science and research, pharmacy administration and sales, the biomedical industry, the personal products industry, forensic science, as well as health-care administration. It also prepares students to pursue graduate studies or enter professional schools including medicine, dentistry, law and physician assistant programs.

### **General Program Requirements**

The University of Toledo requires a minimum of 120 semester hours for graduation with a bachelor of science degree. Credit hour requirements in the College of Pharmacy and Pharmaceutical Sciences vary by major.

### **Double Major within the B.S.P.S. Program Requirements**

- All program requirements for both majors have to be successfully fulfilled.
- Internship for both majors should be taken during different semesters and the student will pay a total of 6 terms of practicum fees.
- A minimum of 150 semester hours for any dual majors is required. For MBC and PTOX dual majors, a minimum of 38 major elective hours is required.

### **Pre-professional Division Requirements**

In the pre-professional division, the first two years of the Bachelor of Science in Pharmaceutical Sciences program, students will be broadly trained in the arts, humanities and social sciences – although the natural sciences will receive emphasis. The curriculum of the pre-professional division of the CPPS is similar for the Pharm.D. and the B.S.P.S. degrees.

### **BSPS Pre-professional (PREP) Curriculum Guide**

TERM	SUBJECT	NUMBER	COURSE TITLE	CR HRS	COURSE REQUIREMENTS
<b>Fall 1st Year</b>					
	PHPR	1000	Orientation <sup>1</sup>	1	
	MATH	1850	Calculus I*	4	
	CHEM	1230	General Chemistry I*	4	
	CHEM	1280	General Chemistry Lab I	1	Coreq CHEM 1230
	BIOL	2170	Biomolecules, Cells, & Inheritance	4	
	BIOL	2180	Biomolecules, Cells, & Inheritance lab	1	Coreq BIOL 2170
				<b>15</b>	
<b>Spring 1st Year</b>					
	PHCL	2610	Introductory Physiology	3	BIOL2170
	MATH	2640	Statistics for Applied Science (or equivalent)* <sup>2</sup>	3	

	CHEM	1240	General Chemistry II	4	CHEM 1230
	CHEM	1290	General Chemistry Lab II	1	Coreq CHEM1240
	ENGL	1110	English Comp I (UT Core Requirement) *	3	
			UT Core Requirement (US Diversity) <sup>3</sup>	3	
				<b>17</b>	
<b>Fall 2nd Year</b>					
	CHEM	2410	Organic Chemistry I	3	CHEM 1240
	CHEM	2460	Organic Chemistry Lab I	1	Coreq CHEM2410
	PHYS	1750	Introduction to Physics <sup>1*</sup>	4	
	ENGL	1130	English Comp II (UT Core Requirement)	3	ENGL1110
			UT Core Requirement (Social Science) <sup>3*</sup>	3	
				<b>14</b>	
<b>Spring 2nd Year</b>					
	CHEM	2420	Organic Chemistry II	3	CHEM 2410
	CHEM	2470	Organic Chemistry Lab II	1	Coreq CHEM2420
			UT Core Requirement (Social Science) <sup>3</sup>	3	
			UT Core Requirement (Humanities/Fine Arts) <sup>3</sup>	3	
			UT Core Requirement (Humanities/Fine Arts) <sup>3</sup>	3	
			UT Core Requirement (Non-US Culture) <sup>3</sup>	3	
				<b>16</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 course load reduced by 3 hours					
<p>*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, MATH1320 or MATH1750 and/or placing into a lower level chemistry - CHEM 1090 (based on students' testing scores) will require additional hours for graduation.</p> <p><b>Equivalent Courses:</b></p> <ul style="list-style-type: none"> <li>- MATH1850 = MATH1750 + 1760</li> <li>- MATH2640 = MATH2600</li> <li>- PHYS1750 = PHYS2070 + 2080</li> <li>- ENGL1110 = HON1010</li> <li>- ENGL1130 = HON1020 or ENGL2950</li> </ul>				<p>Students should consult their Degree Audit for coursework that fulfills elective course requirements in the General Education/Core area.</p>	

## **Bachelor of Science in Pharmaceutical Sciences Professional Division Requirements**

In the professional division of the Bachelor of Science in Pharmaceutical Sciences degree program, the last two years of the program, advanced courses of study and internship in each major lead to a unique concentration in the pharmaceutical fields. Progression requirements are listed under General Criteria for Admission to the professional divisions.

## **Cosmetic Science and Formulation Design (PCOS) Major**

This major is organized around the theme of cosmetic and personal care product formulation design, broadly defined to include the theory, formulation, manufacture, testing and stability of cosmetic ingredient and active ingredient incorporation into a consumer acceptable product which is eye appealing, stable, safe and delivers its claims.

**Cosmetic Science and Formulation Design Professional Division Curriculum**

Professional Term	SUBJECT	NUMBER	COURSE TITLE	CR HRS	COURSE REQUIREMENTS
<b>P1 Fall</b>					
	PHPR	3010	Pharmaceutical Calculations	2	
	PHPR	3020	Pharmaceutical Technology I	4	Coreq PHPR 3010
	PHCL	3700	Pharmacology I	3	
	MBC	3550	Physiological Chemistry I	3	CHEM 2420
	PHPR	3040	Cosmetic Raw Materials	2	CHEM 1230, CHEM 1240
	PHPR	2040	Intro to Cosemtic Science	1	CHEM 1230, CHEM 1240
				<b>15</b>	
<b>P1 Spring</b>					
	PHPR	3030	Pharmaceutical Technology II	4	PHPR 3020
	MBC	3560	Physiological Chemistry II	3	MBC 3550
	MBC	3800	Microbiology & Immunology	3	MBC 3550
	MBC	3850	Micro. & Immuno. Lab	1	Coreq MBC 3800
	PHPR	4730	Cosmetic Science I	3	PHPR 3010, 3020, Coreq 3030
	PHPR	4740	Cosmetic Science Laboratory I	1	PHPR 3030
				<b>15</b>	
<b>Summer</b>					
	PHPR	4890	Internship in Cosmetic Science and Formulation Design	<b>6</b>	
<b>P2 Fall</b>					
	MBC	3330	Techniques in Pharmaceutical and Medicinal Chemistry	2	
	MBC	3340	Techniques in Pharmaceutical and Medicinal Chemistry Laboratory	1	Coreq MBC 3330
	ECON	1200	Micoreconomics*	3	
	PHCL	4760	Toxicokinetics	3	
	PHPR	4750	Cosmetic Science II	3	PHPR 4730, PHPR 4740
	PHPR	4760	Cosmetic Science Laboratory II	1	PHPR 4730, PHPR 4740
				<b>13</b>	
<b>P2 Spring</b>					
	BUAD	3010	Principles of Marketing	3	ECON 1200
	BUAD	1150	Macroeconomics*	3	
			Cosmetic Science Electives <sup>1</sup>	6	
				<b>12</b>	

\* If not taken during Pre-professional Division

<sup>1</sup>See Cosmetic Science elective list

All requirements listed above must be fulfilled with a minimum of 126 semester hours required for graduation.



### Cosmetic Science and Formulation Design Electives

A total of 6 hours of course work must be selected from the list of elective courses below. Other electives require approval of the Cosmetic Science and Formulation Design adviser.

PHPR	4900	Honors Seminar Pharmacy Practice1-3
PHPR	4910	Pharmacy Practice Problems ..... 1-5
PHPR	4960	Honors Thesis in Pharmacy Practice ..... 2-5
CHEM	3730	Physical Chemistry I.....3
CHEM	3740	Physical Chemistry II .....3
ECON	4750	Health Economics .....3
MBC	4380	Medicinal Plants .....3
<b>*MATH</b>	<b>2600 or 2640</b>	Statistics .....3
HEAL	2800	Principles of Nutrition .....3
BIOL	3030	Cell Biology.....3
BIOL	3040	Cell Biology Lab.....2

\*If required in your curriculum, it cannot be counted as an elective.

### Medicinal and Biological Chemistry (MBC) Major

Medicinal and biological chemistry is an interdisciplinary science. This major focuses on synthetic organic chemistry, biochemistry, molecular biology, biotechnology, pharmacology and pharmaceutical chemistry underlying the design, synthesis and development of drugs.

### Medicinal and Biological Chemistry Professional Division Curriculum

Professional Term	SUBJECT	NUMBER	COURSE TITLE	CR HRS	COURSE REQUIREMENTS
<b>P1 Fall</b>					
	MBC	3310	Medicinal Chemistry I	2	
	MBC	3330	Techniques in Pharmaceutical and Medicinal Chemistry	2	
	MBC	3340	Techniques in Pharmaceutical and Medicinal Chemistry Laboratory	1	Coreq MBC 3330
	PHCL	3700	Pharmacology I	3	
	MBC	3550	Physiological Chemistry I	3	
			MBC Laboratory (Recommend MBC 3880) <sup>1</sup>	3	
			Major Elective <sup>2</sup>	2	
				<b>16</b>	
<b>P1 Spring</b>					
	MBC	3100	Practices in Pharmaceutical Research	1	
	MBC	3320	Medicinal Chemistry II	2	MBC 3310, MBC 3550
	MBC	3560	Physiological Chemistry II	3	MBC 3550
	PHCL	3730	BSPS Pharmacology II	3	PHCL 3700

			MBC Laboratory (Recommend MBC 3880) <sup>1</sup>	3	
			Major Elective (Recommend MBC 4870) <sup>2</sup>	1 - 5	
				<b>13 - 17</b>	
<b>P2 Fall</b>					
	MBC	4710	Targeted Drug Design <sup>3</sup>	3	MBC 3320
			Major Elective (Recommend MBC 4850) <sup>2</sup>	1-10	
			MBC Laboratory (Recommend MBC 4880) <sup>1</sup> or Major Elective	3	
				<b>7-16</b>	
<b>P2 Spring</b>					
	MBC	4780	Internship in Med. & Biol. Chem <sup>4</sup>	6 - 12	MBC 3320, MBC 3560
				<b>6 - 12</b>	

All requirements listed above must be fulfilled with a minimum of 126 semester hours required for graduation.

<sup>1</sup>The MBC major requires that 3 semester hours of laboratory instruction be taken at the 3000 level or higher in a course taught by the MBC Department. Completion of 3 semester hours of any of the following courses will satisfy this requirement: MBC 3880, MBC 4850, MBC 4870, MBC 4880, MBC 4900, MBC 4950, or MBC 4960. MBC 3850 Microbiology & Immunology Lab, 1 semester hour credit does not satisfy this requirement unless it is taken with an additional 2 credit hours of any of the other approved laboratories listed above.

<sup>2</sup>To be chosen from the MBC electives list.

<sup>3</sup>MBC 4720, Advances in Drug Design, when offered, will also fulfill the requirement.

<sup>4</sup>Internship can be taken in the summer before the P2 year. The internship sites require an average 3.0 GPA in all chemistry related courses (MBC 3310, MBC 3320, MBC 3550 and MBC 3560).

### MBC Electives

A total of 20 hours of course work must be selected from the list of elective courses below. Other electives require approval of the MBC adviser.

BIOL	3010	Molecular Genetics.....	3
BIOL	3020	Molecular Genetics - Lab .....	2
BIOL	3030	Cell Biology.....	3
BIOL	3040	Cell Biology Lab.....	2
BIOL	4010	Molecular Biology .....	3
BIOL	4030	Microbiology .....	3
BIOL	4050	Immunology.....	3
BIOL	4110	Human Genetics.....	3
BIOL	4330	Parasitology .....	3
CHEM	3310	Analytical Chemistry .....	2
CHEM	3360	Analytical Chemistry Lab.....	2
CHEM	3560	Biochemistry Lab.....	1
CHEM	3610	Inorganic Chemistry .....	3
CHEM	3710	Physical Chemistry for the Biosciences I.....	3
CHEM	3720	Physical Chemistry for the Biosciences II.....	3
CHEM	3730	Physical Chemistry I.....	3
CHEM	3740	Physical Chemistry II .....	3
CHEM	3860	Advanced Laboratory I.....	3
CHEM	3870	Advanced Laboratory II.....	3
CHEM	4300	Instrumental Analysis .....	2
CHEM	4620	Inorganic Chemistry II.....	3

CHEM	4880	Advanced Laboratory III .....	2		
CHEM	4980	Advanced Organic Chemistry.....	2		
EEES	4150	Evolution .....	3		
EEES	4300	Field Botany .....	3		
EEES	4450	Hazardous Waste Management .....	3		
EEES	4510	Environmental Microbiology.....	3		
EEES	4800	Plant Physiological Ecology .....	4		
*MATH	2600 or 2640	Statistics .....	3		
MBC	3800	Microbiology & Immunology.....	3		
MBC	3850	Microbiology & Immunology Lab....	1		
MBC	3880	Synthetic Medicinal Chemistry Lab..	3		
MBC	4300	Chemotherapy and Immunotherapy...	2		
MBC	4470	Advanced Immunotherapeutics .....	2		
MBC	4720	Advances in Drug Design.....	3		
MBC	4850	Adv Immunology and Tissue Culture Lab.....	1-10		
MBC	4870	Biomedical Chem Lab .....	1-10		
MBC	4880	Medicinal Biotech Lab.....	1-10		
MBC	4900	Hrs Seminar in Medic/Bio Chem..	1-3		
MBC	4910	Problems in Bio-medicinal Chem...	1-3		
MBC	4950	Research in Medicinal Chemistry...	3-8		
MBC	4950	Research in Medicinal Chemistry –Honors .....	3-8		
MBC	4960	Hrs Thesis in Medicinal Chem .....	2-5		
MBC	4980	Special Topics in Drug Design .....	1-4		
PHCL	4140	Interpretation of Pharmaceutical Data	3		
PHCL	4810	BSPS Pharmacology III .....	3		
PHCL	4820	BSPS Pharmacology IV .....	3		
PHCL	4730	Toxicology I .....	3PHCL	4750	Toxicology II 3
PHCL	4760	Toxicokinetics.....	3		

\*If required in your curriculum, it cannot be counted as an elective.

### **Medicinal and Biological Chemistry (MBC) Major & Master of Science (M.S.) in Medicinal Chemistry (MC) Option**

#### **Medicinal and Biological Chemistry Professional Division Curriculum**

##### **P1 Year**

###### *First Semester*

MBC	3310	Medicinal Chemistry I .....	2		
MBC	3330	Techniques in Pharmaceutical and Medicinal Chemistry .....	2		
MBC	3340	Techniques in Pharmaceutical and Medicinal Chemistry Laboratory.....	1		
PHCL	3700	Pharmacology I.....	3		
MBC	3550	Physiological Chemistry I.....	3		
MBC	Laboratory	(Recommend MBC 3880) <sup>1</sup> .....	3		
Major	Elective	<sup>2</sup> .....	2		

###### *Second Semester\**

MBC	3100	Practices in Pharmaceutical Research.....	1		
MBC	3320	Medicinal Chemistry II.....	2		
MBC	3560	Physiological Chemistry II .....	3		
PHCL	3730	BSPS Pharmacology II .....	3		
MBC	Laboratory	(Recommend MBC 3880) <sup>1</sup> .....	3		
Major	Elective	(Recommend MBC 3100) <sup>2</sup> .....	1		
Major	Elective	(Recommend MBC 4870) <sup>2</sup> .....	1-4		

*Third semester (Summer)*

MBC 4780 Internship in Med. and  
Biol. Chem<sup>4</sup> ..... 6-12

**P2 Year**

*First Semester*

MBC 4710 Targeted Drug Design<sup>3</sup> ..... 3  
Major Elective (Recommend MBC 4850)<sup>2</sup> ..... 1-10  
MBC Laboratory (Recommend MBC 4880)<sup>1</sup>  
or Major Elective..... 3

Graduation December giving 3.5 years for the B.S.P.S. MBC degree completion +

<sup>1</sup>The MBC major requires that 3 semester hours of laboratory instruction be taken at the 3000 level or higher in a course taught by the MBC Department. Completion of 3 semester hours of any of the following courses will satisfy this requirement: MBC 3880, MBC 4850, MBC 4870, MBC 4880, MBC 4900, MBC 4950, or MBC 4960. MBC 3850 Microbiology & Immunology Lab, 1 semester hour credit does not satisfy this requirement **unless** it is taken with an additional 2 credit hours of any of the other approved laboratories listed above.

<sup>2</sup>To be chosen from the MBC electives list. (These are the same as listed above)

<sup>3</sup>MBC 4720, Advances in Drug Design, when offered, will also fulfill the requirement.

\* In the beginning of the second semester the student identifies a MBC faculty mentor for an in house internship and applies for provisional acceptance to the graduate school

<sup>4</sup>Internship must be taken in the summer before the P2 year with an in house MBC faculty mentor who will then be the mentor for the M.S. degree.

+ Once the B.S.P.S. degree is awarded the student can move from provisional to accepted in the graduate program.

Information on and requirements for the M.S. portion of the B.S.P.S. MBC Major & M.S. MC option is in the CPPS Graduate

Catalogue in the section entitled: Master of Science in Medicinal Chemistry

The student would begin the Master's portion in the spring semester following the B.S.P.S. MBC graduation at the end of the Fall term, and could complete the M.S. degree by the end of the spring semester of the following year. Therefore the two degrees, B.S.P.S. MBC and M.S. MC, could be accomplished in 5 calendar years.

**Pharmaceutics (PHAR) Major**

Pharmaceutics is a multidisciplinary applied science that studies the physical and chemical attributes of drugs. It places a strong emphasis on the design and evaluation of drug delivery systems and dosage forms and also on the understanding and control of the factors influencing clinical response to drug therapy.

**Pharmaceutics Professional Division Curriculum**

Professional Term	SUBJECT	NUMBER	COURSE TITLE	CR HRS	COURSE REQUIREMENTS
<b>P1 Fall</b>					
	MBC	3310	Medicinal Chemistry I	2	
	MBC	3550	Physiological Chemistry I	3	
	PHCL	3700	Pharmacology I	3	
	PHPR	3010	Pharmaceutical Calculations	2	
	PHPR	3020	Pharmaceutical Technology I	4	Coreq PHPR 3010
			Major Electives <sup>1</sup>	2	
				<b>16</b>	
<b>P1 Spring</b>					
	MBC	3320	Medicinal Chemistry II	2	MBC 3310, MBC 3550
	MBC	3560	Physiological Chemistry II	3	MBC 3550
	MBC	3800	Microbiology & Immunology	3	MBC 3550
	PHCL	3730	BSPS Pharmacology II	3	PHCL 3700

	PHPR	3030	Pharmaceutical Technology II	4	PHPR 3020
			Major Electives <sup>1</sup> (Recommended MBC 3100)	1	
				<b>16</b>	
<b>P2 Fall</b>					
	MBC	3330	Techniques in Pharmaceutical and Medicinal Chemistry	2	
	MBC	3340	Techniques in Pharmaceutical and Medicinal Chemistry Laboratory	1	Coreq MBC 3330
	PHPR	4160	Pharmacokinetics	3	
	PHCL	4810	BSPS Pharmacology III	3	PHCL 3730
	BIOL	3030	Cell Biology	3	BIOL 2170 ( min Grade C), CHEM 1240
	BIOL	3040	Cell Biol. Lab	2	Coreq BIOL 3030
			Major Electives <sup>1</sup>	1	
				<b>15</b>	
<b>P2 Spring</b>					
	PHPR	4880	Internship in Pharmaceutics <sup>2</sup>	6-12	MBC 3320,MBC 3560
				<b>6-12</b>	

All requirements listed above must be fulfilled with a minimum of 126 semester hours required for graduation.

<sup>1</sup>To be chosen from the pharmaceutics major electives. Need a minimum of 4 credit hours major electives.

<sup>2</sup>Internship can be taken in the summer before P2 year

### **PHAR Electives**

Other electives require approval of the PHAR major adviser.

PHPR	4680	Parenteral Manufacturing* .....	2
PHPR	4690	Dosage Form Design* .....	3
PHPR	4710	Selected Topics in Pharm. Tech.*.....	3
PHPR	4720	Pharmaceutical Rate Process* .....	3
PHPR	4900	Honors Seminar Pharmaceutics ....	1-3
PHPR	4910	Pharmacy Practice Problems .....	1-5
PHPR	4960	Honors Thesis Pharmacy Practice	2-5
PHCL	4820	Pharmacology IV .....	3
BIOL	3010	Molecular Genetics .....	3
BIOL	3020	Molecular Genetics Lab.....	2
BIOL	4110	Human Genetics.....	3
BIOL	4330	Parasitology .....	3
CHEM	3730	Physical Chemistry I.....	3



CHEM	3740	Physical Chemistry II .....	3
ECON	4750	Health Economics .....	3
MBC	4380	Medicinal Plants .....	3
MBC	3850	Microbiology/Immunology Lab.....	1
**MATH	2600 or 2640	Statistics.....	3
HEAL	2800	Principles of Nutrition .....	3

\*Taught every other year for those undergraduates not planning to apply to UT's industrial pharmacy graduate program.

\*\*If required in your curriculum, it cannot be counted as an elective.

### **Pharmacology/Toxicology (PTOX) Major**

Pharmacology and toxicology are biomedical sciences that study how to develop safe, effective drugs and prevent the harmful effects of chemicals. Pharmacology focuses on the way drugs interact with various living systems, including the properties, effects and mechanisms of drug action. Toxicology focuses on the interaction of toxic compounds in the body, including exposure assessment, dose response assessment and hazard identification.

### **Pharmacology/Toxicology Professional Division Curriculum**

Professional Term	SUBJECT	NUMBER	COURSE TITLE	CR HRS	COURSE REQUIREMENTS
<b>P1 Fall</b>					
	MBC	3310	Medicinal Chemistry I	2	CHEM 2420
	MBC	3550	Physiological Chemistry I	3	CHEM 2420
	PHCL	3700	Pharmacology I	3	
	PHCL	4730	Toxicology I	3	Coreq PHCL 3700
			Major Electives (Recommend BIOL 3010 & 3020 MBC 3330) <sup>1</sup>	5-6	
				<b>16-17</b>	
<b>P1 Spring</b>					
	MBC	3320	Medicinal Chemistry II	2	MBC 3310, MBC 3550
	MBC	3560	Physiological Chemistry II	3	MBC 3550
	PHCL	3730	BSPS Pharmacology II	3	PHCL 3700
	PHCL	3810	Pharmacology & Toxicology Lab <sup>2</sup>	1	PHCL 3700
	PHCL	4750	Toxicology II	3	PHCL 3700
			Major Elective (Recommended MBC 3100) <sup>1</sup>	1	
			Major Elective	3	
				<b>16</b>	
<b>P2 Fall</b>					
	MBC	4710	Targeted Drug Design	3	MBC 3320
	PHCL	4810	BSPS Pharmacology III	3	PHCL 3730
			Major Elective <sup>1</sup>	9	
				<b>16</b>	
<b>P2 Spring</b>					
	PHCL	4780	Internship in Pharmacology/Toxicology <sup>3</sup>	6-12	PHCL 3730, PHCL 3810, MBC 3320, MBC 3560
				<b>6-12</b>	
<b>Footnotes:</b>					
<sup>1</sup> To be chosen from the PTOX electives list.					
<sup>2</sup> Required for internship and only offered in spring.					
<sup>3</sup> Internship can be taken in the summer before the P2					

year.					
All requirements listed above must be fulfilled with a minimum of 126 semester hours required for graduation.					

### **PTOX Electives**

A total of 18 hours of course work must be selected from the list of elective courses below. Other electives require approval of the PTOX adviser.

BIOL	3010	Molecular Genetics.....	3
BIOL	3020	Molecular Genetics - Lab .....	2
BIOL	3030	Cell Biology.....	3
BIOL	3040	Cell Biology Lab.....	2
BIOL	4010	Molecular Biology .....	3
BIOL	4030	Microbiology .....	3
BIOL	4050	Immunology.....	3
BIOL	4110	Human Genetics.....	3
BIOL	4330	Parasitology .....	3
CHEM	3310	Analytical Chemistry .....	2
CHEM	3360	Analytical Chemistry Lab.....	2
CHEM	3710	Physical Chemistry for the Biosciences I .....	3
CHEM	3720	Physical Chemistry for the Biosciences II.....	3
CHEM	3730	Physical Chemistry I.....	3
CHEM	3740	Physical Chemistry II .....	3
CHEM	4300	Instrumental Analysis .....	2
CHEM	4880	Advanced Laboratory III .....	2
MATH	2600 or 2640	Statistics .....	3
MBC	3800	Microbiology & Immunology.....	3
MBC	3100	Practices in Pharmaceutical Research.....	1
MBC	3330	Techniques in Pharmaceutical and Medicinal Chemistry .....	2
MBC	3340	Techniques in Pharmaceutical and Medicinal Chemistry Lab .....	1
MBC	3850	Microbiology & Immunology Laboratory.....	1
MBC	4300	Medicinal Chemistry III.....	2
MBC	4470	Advanced Immunotherapeutics .....	2
MBC	4880	Medicinal Biotech Lab.....	1-10
MBC	4980	Special Topics in Drug Design .....	1-4
PHCL	4140	Interpretation of Pharmaceutical Data .....	3
PHCL	4820	Pharmacology IV .....	3
PHCL	4760	Toxicokinetics.....	3
PHCL	4900	Hnrs Seminar Pharmacology/Toxicology.....	1-3
PHCL	4910	Problems in Pharmacology/Toxicology.....	1-3
PHCL	4960	Honors Thesis Pharmacology/Toxicology.....	2-5



### **Pharmacy Administration (PHAM) Major**

Pharmacy administration focuses on the corporate and managerial aspects of the pharmacy profession. Students may earn a minor in business administration, international business, or professional sales, in addition to the Bachelor of Science in Pharmaceutical Sciences degree. See below for options. With one year of additional graduate study, students in the M.B.A. track options can receive a master of business administration degree.

### **Pharmacy Administration Major Professional Division Curriculum:**

The core curriculum is shown below. For each minor in business administration, international business, marketing, or professional sales and the courses that apply to the MBA curriculum, please refer to the College of Business and Innovation catalog for a complete listing of courses toward each of the minors and the MBA program.

Professional Term	SUBJECT	NUMBER	COURSE TITLE	CR HRS	COURSE REQUIREMENTS
<b>P1 Fall</b>					
	MBC	3310	Medicinal Chemistry I	2	CHEM 2420
	MBC	3550	Physiological Chemistry I	3	CHEM 2420
	PHCL	3700	Pharmacology I	3	
	ECON	1150	Principles of Macroeconomics	3	
	PHPR	3260	Pharmacy Healthcare Administration I	2	ECON 1200
	BUAD	2060	Data Analysis for Business or Math 2630 or 2600 equiv	3	
				<b>16</b>	
<b>P1 Spring</b>					
	MBC	3320	Medicinal Chemistry II	2	MBC 3310, MBC 3550
	MBC	3560	Physiological Chemistry II	3	MBC 3550
	PHCL	3730	BSPS Pharmacology II	3	PHCL 3700
	PHPR	4550	Analysis of Pharm. Environment	3	
	BUAD or ACTG	2040 1040	Financial Accounting Information or Principles of Financial Accounting	3	
			Major Elective <sup>1</sup>	2-3	
				<b>16-17</b>	
<b>P2 Fall</b>					
	PHCL	4810	BSPS Pharmacology III	3	PHCL 3730
	PHPR	4600	Seminar in Pharmacy Administration	1	
	BUAD or ACTG	2050 1050	Accounting for Business Decisions or Principles of Management Accounting	3	BUAD 2040 ACTG 1040
	BUAD	3010	Principles of Marketing	3	ECON 1150 and ECON 1200
	BUAD	3030	Managerial and Behavioral Processes in Organizations	3	
	BUAD	3040	Financial Management	3	(BUAD 2040 or ACTG 1040) and BUAD 2060
			Major Elective <sup>1</sup>	2-3	
				<b>18-19</b>	
<b>P2 Spring</b>					
	PHPR	4780	Internship in Pharmacy Admin <sup>2</sup>	<b>6-12</b>	MBC 3320, MBC 3560

<sup>1</sup> A minimum of 5 hours of electives is required. Choose from PHPR 4590, 4610, and 4630 or any COBI course used to complete a minor in COBI

<sup>2</sup> Internship can be taken in summer before the P2 year.

All requirements listed above must be fulfilled with a minimum of 126 semester hours required for graduation, for professional division classes entering prior to Fall 2018.

The core curriculum is shown above. For each minor in business administration, international business, or professional sales please refer to the College of Business and Innovation (COBI) catalog for a complete listing of courses toward each of the minors.

### **B.S.P.S. Internship Description**

All five majors in the Bachelor of Science in Pharmaceutical Sciences degree program require a real-life workplace internship available in a variety of appropriate settings at local, regional, national and international sites. Most students schedule their internships in the summer after their P1 year. Students are generally assigned to ongoing projects at the site and are evaluated on their performance by the site supervisor. A written internship paper or a technical report and/or a presentation, along with the supervisor's evaluation are submitted to the internship course instructor following completion of the experience.

### **Doctor of Pharmacy Degree Requirements**

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 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 136 semester hours is required for graduation with the Bachelor of Science in Pharmaceutical Sciences-Pharm.D. track degree. A total of 75 graduate semester hours is required for graduation with the Pharm.D. degree. The curriculum is outlined below.

### **Professional Division Requirements**

PROFESSIONAL TERM	SUBJECT	NUMBER	COURSE TITLE	CR HRS	COURSE REQUIREMENTS
			PPT: Pathophysiology and Pharmacotherapy		
			PPD: Professional Practice Development		
			PHCAD: Pharmacy Health Care Administration		
			IPPE: Introductory Pharmacy Practice Experience		
			APPE: Advanced Pharmacy Practice Experience		
<b>P1 Fall</b>					
	MBC	3310	Medicinal Chemistry I	2	
	MBC	3550	Physiological Chemistry I	3	
	PHCL	3700	Pharmacology I	3	
	PHPR	3130	PPT-1	2	Coreq MBC 3310, PHCL 3700
	PHPR	3070	PPD-1	4	
	PHPR	3260	PHCAD-1	2	
	PHPR	3920	IPPE-1	1	
				<b>17</b>	
<b>P1 Spring</b>					
	MBC	3320	Medicinal Chemistry II	2	MBC 3310, MBC 3550
	MBC	3560	Physiological Chemistry II	3	MBC 3550
	MBC	3800	Microbiology & Immunology	3	MBC 3550

	MBC	3850	Microbiology & Immunology Lab	1	Coreq MBC 3800
	PHCL	3720	Pharmacology II	2	PHCL 3700 (min grade C), Coreq PHPR 3140, MBC 3320
	PHPR	3140	PPT-2	2	PHPR 3130 (min grade C), Coreqs: MBC 3320, MBC 3560, PHCL 3720
	PHPR	3080	PPD-2	4	
	PHPR	3930	IPPE-2	1	
				<b>18</b>	
<b>P2 Fall</b>					
	PHPR	4160	Pharmacokinetics	3	
	PHCL	4700	Pharmacology III	2	PHCL 3700 (Min grade C)
	PHPR	4070	PPD-3	3	PHPR 3070 (min grade C)
	PHPR	4130	PPT-3	4	PHPR 3140 (Min grade C), MBC 3800 (Min grade C), Coreq PHCL 4700
	PHPR	4920	IPPE-3	1	PHPR 3930 min grade C
			Undergraduate Professional Electives*	3	
				<b>16</b>	

<b>P2 Spring</b>					
	MBC	4300	Medicinal Chemistry III	2	MBC 3800 (Min grade C)
	PHCL	4720	Pharmacology IV	2	MBC 3800 (Min grade C), PHCL 3700 (Min grade C)
	PHPR	4330	Research Design & Drug Literature Eval I	2	Coreq PHPR 4080
	PHPR	4080	PPD-4	3	PHPR 4070 (Min grade C), Coreqs: PHPR 4140, 4330
	PHPR	4140	PPT-4	4	MBC 3800 (Min grade C), Coreqs: PHCL 4720, MBC 4300
	PHPR	4520	PHCAD-2	2	PHPR 3260 (Min grade C)
	PHPR	4930	IPPE-4	1	PHPR 4920 (Min grade C)
				<b>16</b>	
* A total of 3 credit hours of Undergraduate Professional Electives is required					

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 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 136 semester hours is required for graduation with the bachelor of science in pharmaceutical sciences-Pharm.D. track degree. A total of 75 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 (P3 Summer through P4 Spring) of the Doctor of Pharmacy program.**

PROFESSIONAL TERM	SUBJECT	NUMBER	COURSE TITLE	CR HRS	COURSE REQUIREMENTS
P3 Summer					
	PHPR	6120	PPT 5	3	



			Graduate Professional Electives**	2-5	
				<b>3-8</b>	
** A total of 5 credit hours of Graduate Professional Electives is required					
<b>P3 Fall</b>					
	MBC	5300	Molecular Designs of Cancer Chemotherapy	1	Coreq PHPR 5300
	PHPR	5300	Design and Applications of Cancer Chemotherapy	1	Coreq MBC 5300
	PHPR	6070	PPD-5	3	Coreq PHPR 6130, Coreq PHPR 6340
	PHPR	6130	PPT-6	4	Prereq PHPR 6120 (Min grade C), Coreq PHPR 6070
	PHPR	6160	Advanced Applied Pharmacokinetics	3	
	PHPR	6610	Seminar 1	1	
	PHPR	6260	PHCAD 3	1	
	PHPR	6340	Research Design & Drug Literature Eval 2	2	Coreq PhPr 6070
	PHPR	6920	IPPE 5	1	
			Graduate Professional Electives**	2	
				<b>17-19</b>	
** A total of 5 credit hours of Graduate Professional Electives is required					

<b>P3 Spring</b>					
	MBC	6320	Neurological & Psychiatric Drugs	1	Copreqs PHCL6320, PHPR 6140
	PHCL	6320	Neurological & Psychiatric Pharmacology	1	Coreqs MBC 6320, PHPR 6140
	PHPR	6080	PPD-6	3	Prereq PHPR 6070 (Min grade C) Coreqs PHPR 6140, PHPR 6250
	PHPR	6140	PPT-7	4	Coreq MBC 6320, PHCL 6320
	PHPR	6250	Self-Care	4	Coreq PHPR 6080
	PHPR	6280	PHCAD-4	2	Prereq 6260
	PHPR	6310	Jurisprudence and Ethics	1	
			Graduate Professional Electives**	2-3	
				<b>16-19</b>	
** A total of 5 credit hours of Graduate Professional Electives is required					
<b>P4 Fall</b>					
	PHPR	8630	Longitudinal Drug Information***	2	
	PHPR	8940-001	Advanced Pharmacy Practice Experience I	4	
	PHPR	8940-002	Advanced Pharmacy Practice Experience II	4	
	PHPR	8940-003	Advanced Pharmacy Practice Experience III	4	
	PHPR	8940-004	Advanced Pharmacy Practice Experience IV	4	
				<b>16-18</b>	

\*\* A total of 5 credit hours of Graduate Professional Electives is required

*** Can be taken in Fall or Spring					
Option of graduate elective (if not completed in P3) By DL if not in PHPR 8620 Seminar II					
<b>P4 Spring</b>					
	PHPR	8630	Longitudinal Drug Information***	2	
	PHPR	8940-005	Advanced Pharmacy Practice Experience V	4	
	PHPR	8940-006	Advanced Pharmacy Practice Experience VI	4	
	PHPR	8940-007	Advanced Pharmacy Practice Experience VII	4	
	PHPR	8940-008	Advanced Pharmacy Practice Experience VIII	4	
				<b>16-18</b>	
** A total of 5 credit hours of Graduate Professional Electives is required					
*** Can be taken in Fall or Spring					
Option of graduate elective (if not completed in P3) By DL if not in PHPR 8620 Seminar II					

### Pharm.D. Undergraduate Professional Electives

The following is a list of recommended undergraduate professional electives. A total of 3 credit hours of undergraduate professional electives is required. Other electives may be chosen with the written approval of the CPPS Curriculum Committee. To count towards professional elective requirements, a grade of C or better must be earned in a course. 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.

#### CPPS:

Research with individual faculty (must be arranged before registering)

MBC	4710	Targeted Drug Design.....	3
MBC 4710 is only for students seeking double B.S.P.S. major.			
MBC	4900	Honors Seminar Med & Biol Chem.....	1-3
MBC	4910	..... Problems in Biomedical Chemistry .....	1-3
MBC	4960	Honors Thesis Med & Biol Chem. ....	2-5
PHCL	4730	Toxicology I .....	3
PHCL	4750	Toxicology II .....	3
PHCL	4900	Honors Seminar in Pharmacology .....	1-3
PHCL	4910	Problems in Pharmacology .....	1-3
PHCL	4960	Honors Thesis in Pharmacology .....	2-5
PHPR	3670	Chemical Dependency & The Pharmacist .....	3
PHPR	4590	Readings Access & Cultural Competence .....	2
PHPR	4640	Cosmetic Science Essentials .....	3
PHPR	4900	Honors Seminar in Pharmacy Practice .....	1-3
PHPR	4910	Pharmacy Practice Problems .....	1-5
PHPR	4960	Honors Thesis in Pharmacy Practice .....	2-5

**Others:**

BIOL	3010	Molecular Genetics .....	3
BIOL	3210	Human Nutrition .....	3
BIOL	4110	Human Genetics .....	3
BIOL	4210	Molecular Basis of Disease.....	3
BUAD	2040	Financial Accounting Information	3
BUAD	2050	Accounting Business Decision Making .....	3
BUAD	3010	Principles of Marketing .....	3
BUAD	3030	Manage. & Behave. Processing Orgs. ....	3
BUAD	3040	Principles of Financial Management .....	3
BUAD	3470	Legal & Ethical Environment of Business .....	3
COUN	3140	Substance Abuse Prevention and Community Programming .....	3
HCAR	4510	Medical and Legal Aspects of Healthcare .....	3
HEAL	2800	Principles of Nutrition .....	3
HEAL	3300	Drug Awareness .....	3
HEAL	3600	Prevention and Control of Disease .....	3
HEAL	4100	Health Behavior .....	3
HEAL	4400	Health Problems of Youth .....	3
HEAL	4560	Health Problems of Aging .....	3
HEAL	4700	Nutritional Science .....	3
HEAL	4750	Obesity and Eating Disorders .....	3
*MATH	2600 or 2640	Statistics.....	3
PHIL	3310	Science and Society .....	3
PHIL	3370	Medical Ethics .....	3
PSC	4330	Health Care Policy.....	3

\*If required in your curriculum, it cannot be counted as an elective.

**Pharm.D. Graduate Professional Electives**

The following is a list of recommended graduate professional electives. A total of 5 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.

**MBC**

MBC	5100/7100	Research Practices in Medicinal Chemistry.....	1
MBC	5380	Medicinal & 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	6420/6430	Protein Chemistry/ CHEM 6510/8510.....	2 or 4
MBC	6430/8430	Nucleic Acid Chem/	

	CHEM 6530/8530.....	2 or 4
MBC	6440/8440 Enzymology/ CHEM 6520/8520.....	2 or 4
MBC	6750/8750 Bioorganic Chemistry: Chemical Approaches to Enzymes.....	3
MBC	6800/8800 Methods in Biotechnology .....	3
MBC	6980 Special Topics in Biological Chemistry .....	1 to 5

### PHCL

PHCL	5730 Toxicology I .....	3
PHCL	5750 Toxicology II .....	3
PHCL	5760 Toxicokinetics.....	3
PHCL	5990 Problems in Pharmacology ....	1 to 6
PHCL	6600 Seminar in Pharmacology .....	1
PHCL	6770 Toxicological Risk Assessment ....	3

### PHPR

PHPR	5590 Readings Access & Cultural Competence .....	2
PHPR	5680 Parenteral Manufacturing .....	2
PHPR	5690 Dosage Form Design .....	3
PHPR	5710 Selected Topics in Pharmaceutical Techniques.....	2 to 3
PHPR	5720 Pharmaceutical Rate Processes .....	3
PHPR	5810 Finance & Personal Planning for Pharmacists .....	2
PHPR	5870 Compounding Boot Camp .....	2
PHPR	5990 Problems in Pharmacy Practice .....	1 to 6
PHPR	6400 Advanced Pharmacotherapy .....	2
PHPR	6410 Leadership: Principles and Practice.....	2
PHPR	6530 Research Methods in Pharmacy Practice .....	3
PHPR	6600 Seminar in Administrative Pharmacy .....	1
PHPR	6670 Chemical Dependency & The Pharmacist .....	3
PHPR	6700 Special Topics in Diabetes Care.....	2
PHPR	6810 Hospital Pharmacy Administration .....	3
PHPR	6820 Selected Topics in Hospital Pharmacy .....	3
PHPR	6830 Advanced Community Pharmacy Administration .....	3
PHPR	6840 Selected Topics in Community Pharmacy .....	3
PHPR	6950 Seminar in Industrial Pharmacy ....	1
PHPR	6980 Special Topics.....	1 to 5
PHPR	8540 Geriatric Monitoring Principles ....	3



**PHM**

PHM	6400	Physical and Mental Effects of Psychoactive Substances.....	2
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**Additional Recommendations**

BUAD	6300	Strategic Marketing & Analysis.....	3
BUAD	6600	Supply Chain Management.....	3
BUAD	6900	Strategic Management Capstone.....	3
COMM	6260	Business Communication and Technology.....	3
COUN	6240	Diagnosis and Mental Health .....	4
COUN	6470/8470	Drugs and Mental Health Counseling .....	4
EDP	5210	Child Behavior and Development .....	3
EDP	5230	Adult Development .....	3
HEAL	5750	Obesity and Eating Disorders.....	3
HEAL	6530/8530	Drug Use and Misuse.....	3
MGMT	5110	Introduction to Management .....	3
NURS	5280	Theories of Addictive Behavior .....	3
PSC	5330	Healthcare Policy .....	3
PSY	6600	Behavioral Neuroscience .....	3
PUBH	6330	Public Health and Aging.....	3
SOC	5160	Health and Gender .....	3

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PHA	5239	Legal and Org Environ of Medicines Use .....	3
PHA	6935	Selected Topics in Pharmacy: Pharmaceutical Crimes Practice & Procedure .....	3
PHA	6935	Selected Topics in Pharmacy: Veterinary Pharmacy .....	2

**Mercer College of Pharmacy**

PHA	505	Community Pharmacy Ownership.....	2
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**Pharm.D./MBA Dual Degree Program**

The College of Pharmacy and Pharmaceutical Science (CPPS) and the College of Business and Innovation (COBI) have worked cooperatively to enable students in the Pharm.D. program to earn an MBA.





## **Administration of the Pharm.D./MBA**

The admission process for the Pharm.D./MBA will require that students apply to each program separately. More specifically, students will apply and be required to meet the admission requirements of the MBA program as administered by the COBI, and the same students will be required to apply and meet the admission requirements of the Pharm.D. program as administered by the CPPS. The Pharmacy College Admission Test (PCAT) is accepted by the MBA program in lieu of the GMAT. Students may be eligible for a GMAT waiver based on the current GMAT waiver procedure; the COBI Graduate Programs Office should be contacted for current eligibility requirements. The COBI Graduate Student Advising Office provides advising for the MBA portion of the program. Degrees will be conferred separately with the COBI conferring the MBA, and the CPPS conferring the Pharm.D.

## **MBA Curriculum**

### **Integrated Curriculum**

PharmD/MBA students may replace OPMT 5510 Statistics with the College of Pharmacy and Pharmaceutical Sciences PHPR 4330, PHPR 6340, or any Statistics I equivalent course.

Up to three of the College of Pharmacy and Pharmaceutical Sciences courses will serve as MBA electives. The nine credit hours of elective course work will be fulfilled by (3) AAPE rotations (12 credit hours) from the Management and Administration Track. Students in the dual degree program will earn their MBA in General Administration since the MBA electives are replaced with College of Pharmacy and Pharmaceutical Sciences courses. Please see the COBI catalog for specific course information related to the MBA.

### **MBA Admissions Procedures**

For admission to the program, The University of Toledo MBA program requires a 2.7 undergraduate GPA on a 4.0 scale and a score of 450 on the Graduate Management Admissions Test (GMAT) with a minimum score of 20 in both the verbal and quantitative sections or the PCAT for those in the Pharm.D./MBA Dual Degree Program. For further admission information please refer to the [COBI catalog](#).

## **College of Pharmacy and Pharmaceutical Sciences Faculty**

### **Department of Medicinal and Biological Chemistry**

**Amanda C. Bryant-Friedrich**, 2007, Associate Professor and Dean of the College of Graduate Studies

B.S., North Carolina Central University; M.S., Duke University; Dr. rer. nat., Ruprecht-Karls Universität

**Paul W. Erhardt**, 1994, Distinguished University Professor

B.A., Ph.D., University of Minnesota

**Ezdihar A.M. Hassoun**, 1995\*, Professor

B.S. Pharm., University of Baghdad; Ph.D., University of Uppsala, Sweden

**Channing L. Hinman**, 1985, Associate Professor Emeritus

B.S., Brigham Young University; Ph.D., University of California - Los Angeles

**Wayne P. Hoss**, 1985, Professor Emeritus  
B.S., University of Idaho; Ph.D., University of Nebraska

**Richard A. Hudson**, 1985, Professor Emeritus  
B.A., Kalamazoo College; Ph.D., University of Chicago

**Bina Joe**, 2001\*, Professor  
B.S., M.S., and Ph.D., University of Mysore, Mysore Karnataka, India

**Jon R. Kirchhoff**, 1997\*, Distinguished University Professor  
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**Richard W. Komuniecki**, 1997\*, Distinguished University Professor Emeritus  
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**Marcia F. McInerney**, 1991, Distinguished University Professor; Executive Administrative Dean and Associate Dean for Research and Graduate Studies  
B.A., University of Connecticut; M.S., Case Western University; Ph.D., University of Michigan

**William S. Messer Jr.**, 1985\*, Professor  
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**Surya Nauli**, 2006\*, Adjunct Associate Professor  
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**Susanne Nonekowski**, 2009, Distinguished University Lecturer  
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**Steven M. Peseckis**, 1994, Associate Professor  
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**Zahoor Ahmad Shah**, 2009, Associate Professor and Vice-Chair  
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**James T. Slama**, 1991, Professor and Director of BSPS Program  
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**L.M.V. Tillekeratne**, 2006, Professor  
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\*Joint appointment

+Adjunct appointment

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**Kenneth A. Bachmann**, 1973, Distinguished University Professor Emeritus  
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**Caren Steinmiller**, 2008, Associate Lecturer  
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**Amit K. Tiwari**, 2015, Assistant Professor  
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## **Department of Pharmacy Practice**

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PhD., University of Szeged, Hungary; RPh., M.S. Pharm., Doctor of Pharmacy

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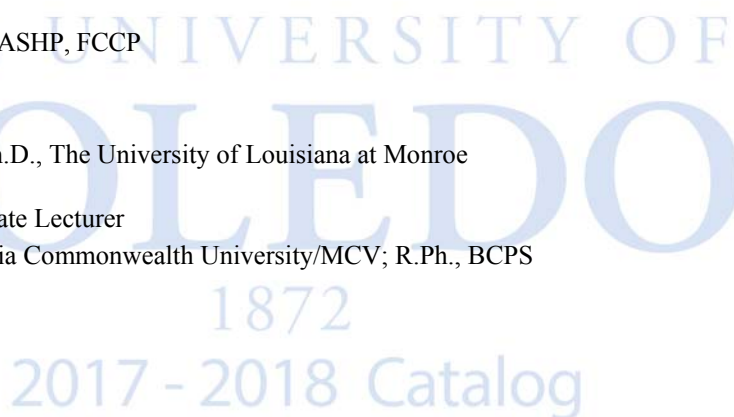
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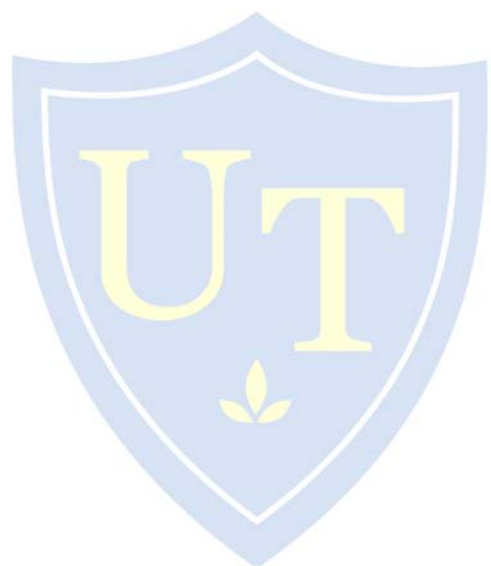




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