COLLEGE OF PHARMACY

Administration

Johnnie L. Early II, dean

Health Education Building 145 ..... Phone: 419.383.1997

Wayne P. Hoss, executive associate dean

Health Education Building 145 ..... Phone: 419.383.1905

Christine N. Hinko, associate dean for student affairs

Health Education Building 155 ..... Phone: 419.383.1904

Robert J. Schlembach, historian and interim director, pharmacy alumni affairs

Health Education Building 153 ..... Phone: 419.383.1997

Academic Departments

Department of Medicinal and Biological Chemistry

Marcia F. McInerney, chair
Bowman- Oddy 2833
Health Education Building 284A
Phone: 419.530.2902
Phone: 419.383.1511

Department of Pharmacology

William S. Messer Jr., chair

Health Education Building 274
Phone: 419.383.1958

Department of Pharmacy Practice

Steven J. Martin, chair

Health Education Building 135

Phone: 419.383.1964

Student Affairs

Jing Deng-Meyer, coordinator of advising and student services for professional division
Health Education Building 155
Phone: 419.383.1904

Dawn L. Ray, coordinator of internal admissions

Health Education Building 155
Phone: 419.383.1904

Deborah J. Sobczak, director of student services for pre-professional division
Wolfe Hall 1227
Phone: 419.530.2010

Crystal Taylor, enrollment management specialist

Health Education Building 155
Phone 419.383.1578

José Treviño, director of transfer services and recruitment

Health Education Building 155
Phone: 419.383.1904

Christine Wickenheiser, academic adviser
Health Education Building 155
Phone: 419.383.1904

MISSION STATEMENT

The mission of the College of Pharmacy is to educate students to meet the pharmaceutical needs of society, to advance pharmaceutical knowledge through research and to serve the profession and the community. Guiding principles are personal integrity, respect for humanity and human diversity, and professionalism.

COLLEGE OF PHARMACY

Accreditation

The College of Pharmacy 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 College of Pharmacy 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.

Please note effective Fall Semester 2009: professional division curricular requirements for the degree programs will be those listed in the catalog for the year in which the student enters the professional division.

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.). All students seeking a degree that will lead to pharmacy licensure will need to complete two years of course work in the preprofessional division of the College of Pharmacy. 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.

Individuals who have already completed a bachelor of science in pharmacy degree and are licensed to practice pharmacy in the U.S. may enroll in the post-baccalaureate Pharm.D. degree program in order to gain additional skills and knowledge in various therapeutic areas.

Pharmaceutical Sciences

The College of Pharmacy 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 course work in the preprofessional division of the College of Pharmacy. 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.

Pharmacy Graduate Degree Programs

The College of Pharmacy 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 pharmacy and healthcare administration; the master of science in medicinal chemistry degree; and the doctor of philosophy in medicinal chemistry degree. Students should contact the College of Pharmacy for admission and curricular requirements.

A graduate certificate program is available to any qualifying student holding a B.S. degree in natural science who wishes to take graduate-level courses in pharmacology and toxicology. Students completing this 15-semester-hour program will be awarded a certificate in pharmacology/toxicology.

Admission to the College

New Students

New students admitted to the College of Pharmacy will begin their studies in the preprofessional division. The minimum criteria for Direct from High School students entering Fall 2011 will be a high school GPA 2.50 –OR- a composite ACT 20 (SAT 950). All undergraduate students in the College of Pharmacy will be considered preprofessional division students until admitted to the professional divisions of the Pharm.D. or B.S.P.S. program. For the entry-level Pharm.D. and the four-year B.S.P.S. programs, the College of Pharmacy limits student enrollment into the professional division (third year or P1 year) in accordance with its facilities.

Contingent Admission

A small group of 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 first and second preprofessional years, while completing specific standards.

Transfer and Change-of-College Students

In order for a student to transfer from other Ohio universities into the preprofessional division of any of the baccalaureate programs of the College of Pharmacy or change from another college within The University of Toledo to the College of Pharmacy, 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. Evaluation of transcripts from other institutions is not done until a student is admitted to the College of Pharmacy. The student may be required to take placement tests in English, chemistry and/or algebra. A student who has attended another Ohio college of pharmacy must have a cumulative higher education GPA of 2.7, be in good standing at the university, and be eligible to return to the college of pharmacy previously attended. Transfer students who wish to apply to the professional division must have been enrolled in The University of Toledo College of Pharmacy and registered for 16 semester hours (a letter grade must be received in each course) prior to application to the professional division.

Students with course work from non-Ohio institutions will be evaluated on an individual basis. After a student is admitted, the student may be asked to supply nonreturnable college catalogs so that course equivalencies can be determined. The student also may be required to take placement tests in English, chemistry and/or algebra. Transfer students are only admitted to the preprofessional division of the B.S.P.S. or the Pharm. D. programs. For a transfer student to be accepted into the second year of the program, all criteria and prerequisites for second-year class standing must be met. Second-year class standing begins only in the fall semester.

Highly qualified students who will have earned bachelor degrees and will have met all prerequisites may be reviewed for admission directly to the professional division of the Pharm.D. program. Admission may be granted only on a space-available basis after all qualified internal candidates have been admitted. Effective with the Fall 2012 professional division admissions cycle, a select and highly qualified group of **up to five** Undergraduates With Degree (UWDs) will be admitted directly into the professional division of the Pharm.D. program. UWDs will be defined as students who have obtained a United States baccalaureate degree before matriculation into the Pharm.D. program at The University of Toledo.

General Criteria for Admission to the Professional Divisions of the Doctor of Pharmacy and the B.S. in Pharmaceutical Sciences

Students are admitted to the professional divisions for the fall semester. 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.

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.

Eligibility for Application

To be eligible to apply for admission into the professional divisions, all applicants must complete the following or their equivalents:

BIOL 2150, 2160, 2170 and 2180
CHEM 1230, 1240, 1280, 1290, 2410 and 2460
MATH 1750
PHCL 2600
PHYS 1750 or 2070
A minimum of 44 earned semester hours
A minimum 2.7 cumulative and science GPA
Matriculated in The University of Toledo College of Pharmacy and enrolled in any University of Toledo course(s) during either the fall or spring semester of the academic year in which they apply

Application

Applicants to the Pharm.D. program will provide the Admissions Committee with a personal essay to be written at a designated time, date and location as indicated on the Internal Admissions website. In addition two letters of recommendation must be submitted through the Internal Admissions website. The letters may be from professors, employers, clergy, close family friends and health professionals (pharmacist, dentist, and physician), or others. Letters from relatives or University of Toledo College of Pharmacy faculty or staff are not acceptable.

Applicants to the B.S.P.S. programs will also submit application materials through the Internal Admissions website by the deadline published on this site.

There are no exceptions to the deadlines.

Final Admission

In order to be finally admitted into the professional division, an applicant must have completed the following or their equivalents:

BIOL 2150, 2160, 2170 and 2180
CHEM 1230, 1240, 1280, 1290, 2410, 2420, 2460 and 2470
MATH 1750 and 1760
ECON 1200
PHCL 2600 and 2620
PHYS 1750 or 2070/2080
A minimum of 63 earned semester hours

Maintain a minimum 2.0 GPA (cumulative and semester) for the spring and, if applicable, summer semesters
Must have a valid Social Security number (for the Pharm.D. only)
Must complete the health requirements as defined by The University of Toledo College of Pharmacy (for the Pharm.D. only)

If an applicant is accepted into the professional division, the acceptance will be provisional, pending the completion of the above requirements. All course prerequisites for the professional divisions must be completed two weeks before the first day of professional division classes in the fall semester for which the application is made. If the applicant fails to meet the deadline for the completion of prerequisite courses, he/she will lose provisional admission status and must apply again for admission to the professional divisions in a subsequent year. It is the student's responsibility to contact the coordinator of internal admissions in the Office of Student Affairs if he/she plans to complete requirements over the summer prior to the start of the P1 year.

Evaluation

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

Personal essay (for Pharm.D. applicants only)
Personal interview at the discretion of the committee (for Pharm.D. applicants only)
Cumulative GPA
Science GPA in the following specified courses:
CHEM 1230, 1240 and 2410
BIOL 2150 and 2170
MATH 1750
PHYS 1750 or 2070
PHCL 2600

The admissions committee will use the better grade for 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. All applicants must have a cumulative GPA based on a minimum of 16 semester hours at The University of Toledo (a letter grade must be received in each course). 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.

Transfer Students

Specific criteria have been approved by the faculty of the College of Pharmacy for the application of transfer students or of change-of-college students to the professional divisions. These are outlined as follows:

a) Transfer students who wish to apply to the professional division must have been enrolled in The University of Toledo College of Pharmacy and registered for 16 hours (a letter grade must be received in each course) prior to application.

b) The general criteria for admission to the professional divisions will be applied to the transfer student in the same manner as for the continuing College of Pharmacy student, i.e., cumulative GPA, science GPA, essential courses or their equivalents through the fall semester of the second year, personal essay, personal interview (for Pharm.D. applicants), and an accumulation of at least 44 earned semester hours. The applicant's cumulative GPA from The University of Toledo or higher education GPA (as described previously), science GPA based on equivalent specified courses (UT or otherwise) as stated above, personal essay and personal interview (for Pharm.D. applicants) will be used in determining admission.

c) The essential courses for final admission to the professional divisions consist of those listed previously. Equivalencies must be determined and appear on the student's transcript and/or in the student's degree audit prior to application. In general, a three-quarter course sequence is necessary to fulfill a two-semester course sequence. See an adviser for further information.

d) In surveying the essential courses, the admissions committee has observed that equivalency is almost automatic for courses in general chemistry, general biology, organic chemistry and physics. Difficulty in determining equivalency has occurred with the mathematics sequence and the functional anatomy and pathophysiology sequence.

e) The only pharmacy courses a preprofessional student is permitted to take through the College of Pharmacy are PHPR 1000 and PHCL 2220, 2600 and 2620, until final admission to the professional divisions is achieved.

College of Pharmacy Honors Program

The College of Pharmacy offers an Honors Program for eligible students in all of its undergraduate programs as part of the University-wide Honors Program. Highly qualified students entering the University in the College of Pharmacy will be considered for entry into honors courses and honors sections of major courses offered in the first two years. Decisions regarding entry of students into the University Honors Program will be made after evaluation of the honors application by the University Honors Program director and the College of Pharmacy honors advisers. Normally, entering students with an ACT composite score of 28 and above, coupled with a 3.75/4.00 high school GPA, will be considered for entry into honors courses. During the first two years of study, the College of Pharmacy offers courses that orient the student toward the profession of pharmacy and the pharmaceutical sciences. Many honors students take most 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 divisions. A specific honors seminar course and an honors thesis option are offered to fulfill the requirements for graduation with honors. These courses also can fulfill requirements for electives.

The bachelor of science in pharmaceutical sciences with college honors is attainable by all students who complete at least 33 semester hours of honors course work with a grade of B or better and who have a minimum cumulative GPA of 3.3. In addition, at least five hours of the 33 must be taken within the honors thesis project and honors seminar. These courses are to be taken within the departments of medicinal and biological chemistry, pharmacology, or pharmacy practice. Graduation with departmental honors also is available to students who are not members of the University Honors Program, 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 Policies

The College of Pharmacy adheres to all of The University of Toledo policies and procedures. Please refer to the University General Academic Policies for academic 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 College of Pharmacy.

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.

Pass/No Credit (P/NC) Grade Option

Refer to the University General Academic Polices for General Academic Policies that apply to all students. P/NC grading is not available for courses taught in the College of Pharmacy. 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 with the exception of developmental math). 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.

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 College of Pharmacy 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 College of Pharmacy 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 College of Pharmacy. In addition, boards of pharmacy may revoke the internship license and/or deny licensure for various drug offenses. Since an internship license is necessary for entrance into the experiential rotations in the required component of the College of Pharmacy curriculum, students without an internship license will be denied admission into these classes. Drug abuse in any form and/or misuse of drug documents must be avoided.

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.

For all undergraduate students in the preprofessional division and in the professional division of the bachelor of science in pharmaceutical sciences, pharmacology/toxicology, medicinal and biological chemistry, pharmaceutics, and pharmacy administration majors in the College of Pharmacy:

a) Any student who fails to achieve a semester or cumulative GPA of 2.0 or greater at the end of any semester will automatically be placed on probation.

b) Any student who fails to achieve a semester or cumulative GPA of 1.0 or greater at the end of any semester will automatically be placed on probation, will undergo a record review by the College of Pharmacy Academic Performance Committee, and may be suspended (see section on suspension below) from the University without a preliminary probationary semester.

c) Any student who fails to achieve a semester or cumulative GPA of 2.0 or greater for any two of three consecutive semesters in attendance will undergo a record review by the College of Pharmacy Academic Performance Committee, and may be suspended (see section on suspension below) from the University.

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

For students entering into the professional division (P1-P2) of the B.S.P.S. Pharm.D. major program:

a) Students must maintain a cumulative pharmacy core-curriculum GPA of 3.0. Beginning in the first year of the professional division, students whose semester or cumulative pharmacy core-curriculum (see below) GPA falls below 3.0 will be given an academic warning. A student with two or more consecutive semesters with a semester or cumulative pharmacy core-curriculum GPA of less than 3.0 will be placed on probation and undergo a record review by the College of Pharmacy Academic Performance Committee that may result in dismissal from the Pharm.D. program.

b) A grade below a C (2.0) in any pharmacy core-curriculum 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) GPA recalculation for undergraduate courses will be allowed, in accordance with the policies of The University of Toledo.

d) To assure matriculation into the post B.S.P.S. portion (P3-P4) of the Pharm.D. curriculum, students must have an undergraduate cumulative pharmacy core-curriculum GPA or 3.0 or better and earned a "C" or better in all pharmacy core-curriculum courses. Students failing to achieve these two requirements will undergo a record review by the College of Pharmacy Academic Performance Committee that, if it does not result in the student's dismissal from the Pharm.D. program, will most likely result in the student needing to enhance his/her undergraduate academic performance prior to being matriculated into the post B.S.P.S. portion (P3-P4) of the Pharm.D. curriculum.

For students entering the post B.S.P.S. portion **(**P3-P4) of the Pharm.D. curriculum:

a) Students must maintain a pharmacy core-curriculum cumulative GPA of 3.0. This pharmacy core-curriculum cumulative GPA will be computed beginning from the first semester of the post-bachelor of science in pharmaceutical sciences course work and will include all post-

B.S.P.S.-level pharmacy courses and pharmacy approved electives (those listed below or those preapproved by College of Pharmacy Curriculum Committee). Beginning in the Fall semester of the P3 year, students whose semester pharmacy core-curriculum GPA falls below 3.0 will be given an academic warning. Students whose pharmacy core-curriculum cumulative GPA falls below 3.0 (beyond the Fall semester of the P3 year) will be placed on probation and allowed one semester to restore their GPA to a cumulative pharmacy core-curriculum level of 3.0 or better. A student with two or more consecutive semesters with a pharmacy core-curriculum semester (this may include P2 Spring semester, but will not include the P3 Summer Semester) or cumulative pharmacy core-curriculum GPA of less than 3.0 will undergo a record review by the College of Pharmacy Academic Performance Committee that may result in dismissal from the Pharm.D. program.

b) A grade below a C (2.0) in any pharmacy core-curriculum 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) Refer to "Experiential Performance Standards" for policies concerning students who fail to pass an Advanced Pharmacy Practice Experience (APPE). A grade of "Unsatisfactory" in any APPE will not have a negative impact on a student's post baccalaureate GPA, however.

d) **GPA RECALCULATION POLICY FOR REPEATED COURSES IN THE POST-BACCALAUREATE COMPONENT (P3-P4) OF THE PHARM.D. PROGRAM:**

Students within the P3-P4 years of the Pharm.D. program who have retaken a course and earned a higher grade may petition to have the first grade excluded from grade point average computation. **However, no grade is removed or erased from a transcript by retaking a course and having the GPA recalculated.**

Credit will only be awarded once for repeated courses. All course grades for all attempts will appear on the student's official transcript regardless of whether the grade has been deleted. **If a grade has been deleted, that grade will not be used in determining the UT grade point average.** However, all grades, including those for repeated courses, will be included in the determination of eligibility for graduation honors, fellowships, or other distinctions awarded on the basis of GPA. A copy of the approved petition will become part of the student's permanent record file.

A student may petition to have a grade of less than B (<3.00) for required P3-P4 level non-Advanced Pharmacy Practice Experience (APPE) courses* excluded from UT GPA computation under the following conditions:

1. Before petitioning, a student must have retaken the **same course** (or the renumbered substitute for that course) in the same department at The University of Toledo and earned a grade of B (3.00) or higher in the course retaken. If a grade of B (3.00) or higher is not earned when the course is retaken, grades from both attempts will be included in the GPA calculation.

2. No more than two courses, regardless of credit hours, may be deleted from the student's transcript.

3. This policy applies only to the first recorded grade in a course that a student has repeated.

4. If a student retakes three or more courses, he/she may elect which courses to petition for GPA recalculation. Once the petition is approved, the choice of courses is final and may not be changed.

5. A course may only be petitioned once for GPA recalculation.

6. The GPA recalculation allowances provided by this policy are in addition to any GPA recalculation allowances that students may have used during the baccalaureate portion of their Pharm.D. program.

***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	PHPR 8620

e) Graduation requirements for Doctor of Pharmacy: Must have a cumulative post-baccalaureate GPA of 3.0 or better and earned a "C" or better in all post-baccalaureate pharmacy core-curriculum courses.

Suspension

Suspension is made by the dean on advice from the College of Pharmacy Academic Performance Committee, which reviews the performance of all students periodically. Suspension is from the University. The period of suspension is at least one semester, exclusive of the summer terms. A student who is suspended must petition the dean for readmission, in writing (with a copy to the associate dean for student affairs), at least five weeks prior to the beginning of the semester to which the petition is directed. If the petition is accepted, the college will determine the conditions under which the student will be permitted to re-enroll. If a student is readmitted and does not perform satisfactorily, permanent dismissal from the College of Pharmacy may result. A student who is on academic or disciplinary probation or suspension will be required to relinquish the duties of any office in the College of Pharmacy organizations until the student is in "good academic standing," as defined below.

If a student is suspended, and therefore is ineligible to attend classes in a subsequent semester, that student must drop all of the courses for that semester.

Good Standing

The College of Pharmacy defines "good academic standing" in the following manner:

a) For all preprofessional students, and professional division students in the bachelor of science in pharmaceutical sciences program (pharmacology/toxicology, medicinal and biological chemistry, pharmaceutics and pharmacy administration majors): a minimum cumulative GPA of 2.0 and a minimum GPA of 2.0 for the semester.

b) For all P1 and P2 professional division students in the Pharm.D. program: a minimum cumulative pharmacy core-curriculum GPA of 3.0 and a minimum GPA of 3.0 for the semester.

c) For students in the post-baccalaureate portion of the Pharm.D. program: a minimum pharmacy core-curriculum semester and cumulative GPA of 3.0.

Pharmacy Core-Curriculum

Undergraduate core-curriculum courses taught in the College of Pharmacy beginning in the P1 year of the Pharm.D. professional division:

MBC 3310, 3320, 3550, 3560, 3800, 3850 and 4300
PHCL 3700, 3720, 4700 and 4720
PHPR 3070, 3080, 3130, 3140, 3260, 3920, 4070, 4080, 4130, 4140, 4160, 4330, 4520 and 4920

Post-B.S.P.S. core-curriculum courses taught in the College of Pharmacy beginning in the P3 year of the Pharm.D. professional division:

MBC 5300 and 6320
PHCL 6320
PHPR 5300, 6070, 6080, 6120, 6130, 6140, 6160, 6250, 6260, 6280, 6310, 6340, 6610, 6920, and 8620

Any approved Pharm.D. elective. Additional graduate level electives may be considered but must be preapproved by the College of Pharmacy Curriculum committee.

Experiential Performance Standards

Advanced Pharmacy Practice Experience (APPE) Expectations

Any student who fails to pass a single APPE rotation or is dismissed from a single APPE rotation (for reasons other than an action detrimental to patient care and/or to the clinical service) will be placed on academic probation immediately upon completion or dismissal from the rotation. The student will continue on academic probation for the duration of his/her APPE rotation experience.

Any student on probation who fails to pass a second APPE rotation or is dismissed from an APPE rotation will be immediately removed from the APPE program, receive a record review by the Academic Performance Committee, and be subject to dismissal from the doctor of pharmacy program. All previously scheduled APPE sites will become available for other students.

If the situation leading to the dismissal of a student from an APPE rotation is related to an action that is considered academic dishonesty, detrimental to patient care and/or the clinical service, or is detrimental to The University of Toledo's relationship with the experiential site, the student will be immediately removed from the APPE program. The Academic Performance Committee will review the situation, and the student may be subject to dismissal from the doctor of pharmacy program. All previously scheduled APPE sites will become available for other students.

Actions that are subject to dismissal are outlined in the Experiential Dismissal Policy.

Experiential Dismissal Policy

Pharmacy students may be dismissed from an experiential site at any time during the rotation by the experiential site and/or preceptor through the initiation of the dismissal procedure described below.

Actions Subject to Dismissal

Following are circumstances or actions under which experiential students may be dismissed using the dismissal procedure described below:

* Failure to adhere to experiential site policy and/or procedures.
* Failure to adhere to UT experiential program policy and/or procedures.
* Failure to meet a UT experiential program requirement.
* Blatantly unacceptable or continuously unacceptable experiential program performance.
* Mistreatment of UT and/or experiential site employees.
* The performance or an action that is detrimental to the care of a patient.
* The performance or an action that is detrimental to the clinical service provided by the site and/or preceptor.
*The performance or an action that is considered academic dishonesty.
*The performance or an action that is considered detrimental to The University of Toledo's relationship with the experiential site.

Dismissal Procedure

When a circumstance or action that is determined to be grounds for dismissal occurs, the experiential preceptor will inform the student and director of experiential programs of the situation. The situation will then be handled as follows:

a) If the situation is related to failure to meet a requirement, failure to follow policy or procedure, improper behavior or inadequate experiential performance, the student will be given a specific outline by the experiential preceptor as to how his/her performance must improve and/or meet expectations. An acceptable timeframe for improved performance will be determined by the preceptor and experiential director. For APPE students this will generally be considered 5 working days. If there are not enough days remaining in the experience to fulfill this requirement, the student will be required to remediate the experience. A copy of this outline will be sent to the director of experiential programs. If after the determined timeframe such performance has not been achieved, the student will be removed from the experiential site and will receive either a grade of U, IN or F as determined by the director of experiential programs.

b) If the situation is related to an action that is detrimental to patient care and/or to the clinical service, academic dishonesty, or detrimental to the relationship between the site and the college, upon discussion of the situation between the experiential preceptor and the director of experiential programs, the student shall be subject to immediate removal from the experiential site and shall receive a grade of U or F.

If a student has any question over the handling of his/her dismissal procedure by the director of experiential programs and/or preceptor, he/she should contact the chair of the department of pharmacy practice.

Introductory Pharmacy Practice Experience (IPPE) Expectations

All students in the professional division of the Pharm.D. program will be required to successfully complete the IPPE course series before beginning APPEs. The IPPE course 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. Prior to beginning IPPE site visits, all students must:

- Document completion of several health requirements, including immunizations.
- Obtain an intern license through the Ohio State Board of Pharmacy, which requires applicants to undergo a Federal and State of Ohio background check.

Specific details regarding the above requirements will be provided to all students upon admission into the Pharm.D. Program. Additional requirements and expectations will be included in the syllabus for each course within the IPPE course series.

Student Grievances

Student complaints specifically related to Accreditation Council for Pharmacy Education (ACPE) standards should be submitted on the appropriate form to the College of Pharmacy Office of Student Affairs (Wolfe Hall Room 1227 or Heath Education Building 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. Students can also find the ACPE standards at the ACPE web site.

Student issues or complaints regarding specific courses should be resolved via discussion with the course instructor. If further resolution is required, the departmental chair should be consulted. Please refer to the UT Policy web site for additional information on academic policies.

College Level Examination Program Credit (CLEP)

The College of Pharmacy 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 in the humanities and social sciences examination will count only toward meeting the additional humanities and social science requirements.

Credit by Exam

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

Criteria for Class Standing in the College of Pharmacy

Year	Criteria
First	Earned less than 30 semester hours.
Second	Earned at least 30 semester hours, have a higher education GPA (as previously defined) of 2.5 or greater (based on the point average scale of A equaling 4.0) and enrolled for or completed organic chemistry, physics and functional anatomy and pathophysiology.
Third (P1)	Earned at least 63 semester hours and officially accepted into the professional division.

Undergraduate and Professional Programs of Study

Note: 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 College of Pharmacy 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 preprofessional student is permitted to take through the College of Pharmacy are PHPR 1000 and PHCL 2220, 2600 and 2620. 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 College of Pharmacy 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 four majors under this degree program – medicinal and biological chemistry, pharmacology/toxicology, pharmaceutics, 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, 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

A minimum of 126 semester hours is required for graduation with all the bachelor of science in pharmaceutical sciences non-Pharm.D. majors.

Preprofessional Division Requirements

In the preprofessional 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 preprofessional division of the College of Pharmacy is the same for the Pharm.D. and the B.S.P.S. degrees.

First Year

First Semester

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

Second Semester

BIOL	2170	Fundamentals of Life Sci. II	4
BIOL	2180	Fundamentals of Life Sci. Lab II	1
CHEM	1240	General Chemistry II	4
CHEM	1290	General Chemistry Lab II	1
MATH	1760	Calculus for the Life Sciences II	3
UT Core Requirement (ENGL 1130 or equivalent)*			3

Second Year

First Semester

CHEM	2410	Organic Chemistry I	3
CHEM	2460	Organic Chemistry Lab I	1
PHCL	2600	Funct. Anat. & Pathophysiology I	4
PHYS	1750	Introduction to Physics or equiv	4
UT Core Requirement (PSY 1010 or SOC 1010)*			3
UT Core Requirement (Diversity/Multicultural)*			3

Second Semester

CHEM	2420	Organic Chemistry II	3
CHEM	2470	Organic Chemistry Lab II	1
PHCL	2620	Funct. Anat. & Pathophysiology II	4
UT Core Requirement (ECON 1200)*			3
UT Core Requirement (Humanities/Fine Arts)*			3
UT Core Requirement (Humanities/Fine Arts)**			3

*Suggested sequence

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

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. Admission requirements are listed under General Criteria for Admission to the professional divisions.

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

P1 Year

First Semester

MBC	3310	Medicinal Chemistry I	2
MBC	3330	Applied Drug Design	2
PHCL	3700	Pharmacology I	3
MBC	3550	Physiological Chemistry I	or
CHEM	3510	Biochemistry I	3
Major Elective (Recommend MBC 3880)[1]			2
Major Elective (Recommend CHEM 3310)[1]			2
Major Elective (Recommend CHEM 3710)[1]			3

Second Semester

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

P2 Year

First Semester

MBC	4710	Targeted Drug Design[2]	3
Major Elective (Recommend MBC 4850)[1]			1-10
Major Elective (Recommend MBC 4870)[1]			1-10
Major Elective (Recommend MBC 4880)[1]			1-10

Second Semester

MBC	4780	Internship in Med. & Biol. Chem[3]	6-12

[1]To be chosen from the MBC electives list.

[2]MBC 4720, Advances in Drug Design, when offered, will also fulfill the requirement.

[3]Internship can be taken in the summer before the P2 year. The internship sites require students to have an average GPA of 3.0 in all chemistry courses (CHEM and MBC).

MBC Electives

A total of 25 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	Introduction to Statistics	3
MBC	3100	Practices in Pharmaceutical Research	1
MBC	3800	Microbiology & Immunology	3
MBC	3880	Medicinal & Biological Chem Lab	1-4
MBC	4300	Chemotherapy and Immunotherapy	2
MBC	4470	Advanced Immunotherapeutics	2
MBC	4720	Advances in Drug Design	3
MBC	4850	Adv Immunology & Tissue Culture Lab	1-10
MBC	4870	Biomedicinal Chem Lab	1-10
MBC	4880	Medicinal Biotech Lab	1-10
MBC	4900	Hnrs Seminar in Medic/Bio Chem	1-3
MBC	4910	Problems in Bio-medicinal Chem	1-3
MBC	4950	Research in Medicinal Chemistry	6-8
MBC	4950	Research in Medicinal Chemistry –Honors	6-8
MBC	4960	Hnrs Thesis in Medicinal Chem	2-5
MBC	4980	Special Topics in Drug Design	1-4
PHCL	4140	Interpretation of Pharmaceutical Data	3
PHCL	4150	Biopharmaceutics/Pharmacokinetics	4
PHCL	4630	Cancer chemotherapy	3
PHCL	4810	BSPS Pharmacology III	3
PHCL	4820	BSPS Pharmacology IV	3
PHCL	4730	Toxicology I	3
PHCL	4750	Toxicology II	3
PHCL	4760	Toxicokinetics	3
PHCL	4800	Human-Xenobiotic Interactions	3

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

P1 Year

First Semester

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

Second Semester

MBC	3320	Medicinal Chemistry II	2
MBC	3560	Physiological Chemistry II	3
MBC	3800	Microbiology & Immunology	3
PHCL	3730	BSPS Pharmacology II	3
PHPR	3030	Pharmaceutical Technology II	4

Pharmaceutical or General Electives[1] (Recommended MBC 3100) ... 1

Summer between P1 and P2 Year

PHPR	4880	Internship in Pharmaceutics	6-12

P2 Year

First Semester

CHEM	3310	Analytical Chemistry	2
PHPR	4160	Pharmacokinetics	3
PHCL	4810	BSPS Pharmacology III	3
Pharmaceutical or General Electives[1]			2-5

Second Semester

CHEM	3360	Analytical Chemistry Lab	2
PHCL	4820	BSPS Pharmacology IV	3
BIOL	3030	Cell Biology	3
BIOL	3040	Cell Biol. Lab	2
Pharmaceutical or General Electives[1]			2-6

[1]To be chosen from the pharmaceutics or general electives list below.

PHAR Electives

Other electives require approval of the PHAR major adviser.

Pharmaceutics Electives (at least 2 hours)

MATH	2600	Introduction to Statistics	3
PHPR	4010	Modern Drug Delivery	2
PHPR	4250	Sterile Products	2
PHPR	4680	Parenteral Manufacturing*	2
PHPR	4690	Dosage Form Design*	3
PHPR	4710	Selected Topics in Pharm. Tech.*	2
PHPR	4720	Pharmaceutical Rate Process*	2
PHPR	4900	Honors Seminar Pharmaceutics	1-3
PHPR	4910	Pharmacy Practice Problems	1-3
PHPR	4960	Honors Thesis Pharmacy Practice	2-5

General Electives (at least 2 hours)

BIOL	3010	Molecular Genetics	3
BIOL	3020	Molecular Genetics Lab	2
BIOL	4110	Human Genetics	3
BIOL	4330	Parasitology	3
CHEM	3710	Physical Chemistry for Bioscience I	3
CHEM	3720	Physical Chemistry for Bioscience 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
ECON	4750	Health Economics	3
MBC	4300	Medicinal Chemistry III	2
MBC	3100	Practices in Pharmaceutical Research	1
PHCL	4140	Interpretation of Pharmaceutical Data	3
PHCL	4630	Cancer Chemotherapy	3

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

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

P1 Year

First Semester

MBC	3310	Medicinal Chemistry I	2
MBC	3550	Physiological Chemistry I	3
PHCL	3700	Pharmacology I	3
PHCL	4730	Toxicology I	3
Major Electives (Recommend BIOL 3010 & 3020 MBC 3330)[1]			5-6

Second Semester

MBC	3320	Medicinal Chemistry II	2
MBC	3560	Physiological Chemistry II	3
PHCL	3730	BSPS Pharmacology II	3
PHCL	3810	Pharmacology & Toxicology Lab[2]	1
PHCL	4750	Toxicology II	3
Major Elective (Recommended MBC 3100)[1]			1
Major Elective		…….	3

P2 Year

First Semester

MBC	4710	Targeted Drug Design	3
PHCL	4810	BSPS Pharmacology III	3
Major Elective[1]			9

Second Semester

PHCL	4780	Internship in Pharmacology/Toxicology[3]	6-12

[1]To be chosen from the PTOX electives list.
[2]Required for internship and only offered in spring.
[3]Internship can be taken in the summer before the P2 year.

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	Introduction to Statistics	3
MBC	3800	Microbiology & Immunology	3
MBC	3100	Practices in Pharmaceutical Research	1
MBC	3330	Applied Drug Design	2
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	4150	Biopharmaceutics/Pharmacokinetics	4
PHCL	4300	Selected Topics in Pharmacology	2
PHCL	4630	Cancer Chemotherapy	3

PHCL	4820	Pharmacology IV	3
PHCL	4760	Toxicokinetics	3
PHCL	4800	Human-Xenobiotic Interactions	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 options for this major are shown below.

P1 Year

First Semester

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

Second Semester

MBC	3320	Medicinal Chemistry II	2
MBC	3560	Physiological Chemistry II	3
PHCL	3730	BSPS Pharmacology II	3
PHPR	4550	Analysis of Pharm. Environment	3
ACTG	1040	Principals of Financial Accounting	or
BUAD	2040	Financial Accounting Information	3
Major Elective[1]			2-3

P2 Year

First Semester

PHCL	4810	BSPS Pharmacology III	3
PHPR	4600	Seminar in Pharmacy Administration	1
BUAD	3010	Principles of Marketing	3
BUAD	3030	Manage. & Behave. Process in Orgs.	3
BUAD	3040	Prin. of Financial Management	3
ACTG	1050	Principle of Management Accounting	or
BUAD	2050	Accounting for Business Decision-Making	3
Major Elective[1]			2-3

Second Semester

PHPR	4780	Internship in Pharmacy Adm[2]	6-12

*This course is not required of students accepted to PHAM before Fall 2010.

[1] Major Electives : (a minimum of 5 hours of electives is required)

PHPR	4590	Readings in Access & Cultural Competence	2
PHPR	4610	Pharmacoeconomics and Outcomes I	2
PHPR	4630	Research Methods Pharmacy Administration	3

Any course used to complete a minor degree in the College of Business Administration

[2] Internship can be taken in summer before the P2 year.

Business Administration Minor Option

P1 Year

First Semester

MBC	3310	Medicinal Chemistry I	2
MBC	3550	Physiological Chemistry I	3
PHCL	3700	Pharmacology I	3
PHPR	3260	Pharmacy Healthcare Administration I*	2
ECON	1150	Principles of Macroeconomics	3
BUAD	2060 or MATH 2630 or 2600 or equiv.		3

Second Semester

MBC	3320	Medicinal Chemistry II	2
MBC	3560	Physiological Chemistry II	3
PHCL	3730	BSPS Pharmacology II	3
BUAD	3010	Principles of Marketing[1]	3
ACTG	1040	Principles of Financial Accounting[1]	or
BUAD	2040	Financial Accounting Information[1]	3

Summer Between P1 and P2 Years

PHPR	4780	Internship in Pharmacy Administration	6-12

P2 Year

First Semester

PHCL	4810	BSPS Pharmacology III	3
PHPR	4600	Seminar in Pharmacy Administration	1
BUAD	3030	Manage. & Behav. Process in Orgs[1]	3
BUAD	3040	Prin. of Financial Management[1]	3
BUAD	2050	Accounting for Business Decision Making[1]	or
ACTG	1050[1]	Principles of Management Accounting[1]	3
BUAD 1020 or CMPT 1100 or equivalent			3

Second Semester

PHPR	4550	Analysis of Pharm. Environment	or
PHPR	4520	Pharmaceutical Management & Marketing	or
MKTG	4540	Business Marketing	3
Business Minor Elective[2]			3
Major Elective (choose any business course or PHPR 4590, 4610, or 4630)			2-3

*This course is not required of students accepted to PHAM before Fall 2010.

[1]A grade of C or higher is required for the minor.

[2]Choose from business administration minor requirements listed by the College of Business administration. Recommend BUAD 3020 or 2070.

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Professional Sales Minor Option

P1 Year

First Semester

MBC	3310	Medicinal Chemistry I	2
MBC	3550	Physiological Chemistry I	3
PHCL	3700	Pharmacology I	3
PHPR	3260	Pharmacy Healthcare Administration I*	2
ECON	1150	Principles of Macroeconomics	3
BUAD	2060 or MATH 2630 or 2600 or equiv...		3

Second Semester

MBC	3320	Medicinal Chemistry II	2
MBC	3560	Physiological Chemistry II	3
PHCL	3730	BSPS Pharmacology II	3
BUAD	3010	Principles of Marketing[1]	3
ACTG	1040	Principles of Financial Accounting	or
BUAD	2040	Financial Accounting Information	3

Summer Between P1 and P2 Years

PHPR	4780	Internship in Pharmacy Administration	6-12

P2 Year

First Semester

PHCL	4810	BSPS Pharmacology III	3
PHPR	4600	Seminar in Pharmacy Administration	1
BUAD	3030	Manage. & Behav. Process in Orgs	3
PSLS	3440	Sales[1]	3
PSLS	3450	Acct. & Territory Management[1]	3
ACTG	1050	Principles of Management Accounting	or
BUAD	2050	Accounting for Business Decision-Making	3

Second Semester

BUAD	3040	Prin. of Financial Management	3
PSLS	4740	Advanced Sales[1]	3
PSLS	3080	Purchasing & Business Relation Mgmt.	or
PSLS	4710	Salesforce Leadership[1]	3
PHPR	4550	Analysis of Pharmaceutical Environment	3

*This course is not required of students accepted to PHAM before Fall 2010.

[1]A grade of C or higher is required for the minor.

International Business Minor Option

P1 Year

First Semester

MBC	3310	Medicinal Chemistry I	2
MBC	3550	Physiological Chemistry I	3
PHCL	3700	Pharmacology I	3
PHPR	3260	Pharmacy Healthcare Administration I*	2
ECON	1150	Principles of Macroeconomics	3
BUAD	2080	Global Environment of Business	3

Second Semester

MBC	3320	Medicinal Chemistry II	2
MBC	3560	Physiological Chemistry II	3
PHCL	3730	BSPS Pharmacology II	3
ACTG	1040	Principles of Financial Accounting	or
BUAD	2040	Financial Accounting Information	3
BUAD	3030	Manage. & Behave. Process in Orgs.	3

Summer Between P1 and P2 Years

PHPR	4780	Internship in Pharmacy Administration	6-12

P2 Year

First Semester

PHCL	4810	BSPS Pharmacology III	3
PHPR	4600	Seminar in Pharmacy Administration	1
ACTG	1050	Principles of Management Accounting	or
BUAD	2050	Accounting for Business Decision-Making	3
BUAD	2060 or MATH 2600 or 2630 or equiv.		3
BUAD	3010	Principles of Marketing	3
BUAD	3040	Prin. of Financial Management	3

Second Semester

PHPR	4550	Analysis of Pharmaceutical Environment	3
BUAD	2070	Application of Statistics	3
FINA	3500	International Business Finance[1]	3
IBUS	3600	International Management[1]	3
MKTG	3140	International Marketing[1]	3

*This course is not required of students accepted to PHAM before Fall 2010.

[1]If IBUS 3150 is taken for non-U.S. culture diversity studies, students only need to take two of these courses.

Business Administration Minor and Professional Sales Minor Option

P1 Year

First Semester

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

Second Semester

MBC	3320	Medicinal Chemistry II	2
MBC	3560	Physiological Chemistry II	3
PHCL	3730	BSPS Pharmacology II	3
BUAD	3010	Principles of Marketing[1]	3
ACTG	1040	Principles of Financial Accounting[1]	or
BUAD	2040	Financial Accounting Information[1]	3
BUAD	1020	Microcomputer Applications in Business	or
CMPT	1100	Computer Information Applications	
		Or equivalent	3

Summer Between P1 and P2 Years

PHPR	4780	Internship in Pharmacy Administration	6-12

P2 Year

First Semester

PHCL	4810	BSPS Pharmacology III	3
PHPR	4600	Seminar in Pharmacy Administration	1
PSLS	3440	Sales[1]	3
PSLS	3450	Account & Territory Management[1]	3
ACTG	1050	Principles of Management Accounting[1]	or
BUAD	2050	Accounting for Business Decision-Making[1]	3
BUAD	3030	Manage. & Behav. Process Orgs[1]	3

Second Semester

PHPR	4550	Analysis of Pharmaceutical Environment	3
BUAD	2070	Application of Statistics[2]	3
BUAD	3040	Prin. of Financial Management[1]	3
PSLS	4740	Advanced Sales[1]	3
PSLS	3080	Purch. & Busi. Rela. Mgmt[1]	*or*
PSLS	4710	Sales Force Leadership[1]	3

*This course is not required of students accepted to PHAM before Fall 2010.
[1]A grade of C or higher is required for the minors.
[2]If IBUS 3150 is taken for non-U.S. culture diversity studies, students don't need to take BUAD 2070.

International Business & Business Administration Minors Option

P1 Year

First Semester

MBC	3310	Medicinal Chemistry I	2
MBC	3550	Physiological Chemistry I	3
PHCL	3700	Pharmacology I	3
PHPR	3260	Pharmacy Healthcare Administration I*	2
ECON	1150	Principles of Macroeconomics	3
BUAD	2080	Global Environment of Business	3
BUAD	1020	Microcomputer Applications in Business	or
CMPT	1100	Computer Information Appl. or Equiv.	3

Second Semester

MBC	3320	Medicinal Chemistry II	2
MBC	3560	Physiological Chemistry II	3
PHCL	3730	BSPS Pharmacology II	3
BUAD	3030	Manage. & Behave. Proces. in Orgs[1]	3
ACTG	1040	Principles of Financial Acct[1]	or
BUAD	2040	Financial Accounting Information[1]	3

Summer Between P1 and P2 Years

PHPR	4780	Internship in Pharmacy Administration	6-12

P2 Year

First Semester

PHCL	4810	BSPS Pharmacology III	3
PHPR	4600	Seminar in Pharmacy Administration	1
BUAD	3010	Principles of Marketing[1]	3
BUAD	3040	Prin. of Financial Management[1]	3
ACTG	1050	Principles of Management Accounting[1]	or
BUAD	2050	Accounting for Business Decision-Making[1]	3
BUAD	2060	Data Analysis for Business	or
MATH	2600 or 2630 or equiv.		3

Second Semester

PHPR	4550	Analysis of Pharmaceutical Environment	3
BUAD	2070	Appl. of Stats in Bus Decision Making[1]	3
FINA	3500	International Business Finance[2]	3
IBUS	3600	International Management[2]	3
MKTG	3140	International Marketing[2]	3

*This course is not required of students accepted to PHAM before Fall 2010.

[1]A grade of C or higher is required for the Business Administration Minor.

[2]If IBUS 3150 is taken for non-U.S. culture diversity studies, students only need to take two of these three courses.

Business Administration Minor & M.B.A. Track Option[1]

P1 Year

First Semester

MBC	3310	Medicinal Chemistry I	2
MBC	3550	Physiological Chemistry I	3
PHCL	3700	Pharmacology I	3
PHPR	3260	Pharmacy Healthcare Administration I*	2
BUAD	3030	Manage. & Behav. Process in Orgs	3
ECON	1150	Principles of Macroeconomics	3

Second Semester

MBC	3320	Medicinal Chemistry II	2
MBC	3560	Physiological Chemistry II	3
PHCL	3730	BSPS Pharmacology II	3
ACTG	1040	Principles of Financial Accounting	or
BUAD	2040	Financial Accounting Information	3
BUAD	2060	Data Analysis for Business	or
MATH	2630 or 2600 or equiv.		3

Summer Between P1 and P2 Years

PHPR	4780	Internship in Pharmacy Administration	6-12

P2 Year

First Semester

PHCL	4810	BSPS Pharmacology III	3
PHPR	4600	Seminar in Pharmacy Administration	1
BUAD	2070	Appl. of Stats in Bus Deci. Making	3
BUAD	3010	Principles of Marketing	3
ACTG	1050	Principles of Management Accounting	or
BUAD	2050	Accounting for Business Decision Making	3

Second Semester

PHPR	4550	Analysis of Pharm. Environment	*3*
BUAD	3020	Principles of Mfg. & Service Systems	3
BUAD	3040	Prin. of Financial Management	3
BUAD	1020	Microcomputer Applications in Business	or
CMPT	1100	Computer Information Applications	3

* This course is not required of students accepted to PHAM before Fall 2010.

[1]This track will enable students to fulfill the prerequisites for the M.B.A. program with grades of C (2.0) or higher in all BUAD courses listed in this curriculum. To be admitted to the M.B.A. program in the College of Business Administration, students must successfully complete the GMAT prior to application.

Professional Sales/Business Administration Minors and M.B.A. Track Option[1]

P1 Year

First Semester

MBC	3310	Medicinal Chemistry I	2
MBC	3550	Physiological Chemistry I	3
PHCL	3700	Pharmacology I	3
PHPR	3260	Pharmacy Healthcare Administration I*	2
BUAD	3030	Manage. & Behav. Process in Orgs	3
ECON	1150	Principles of Macroeconomics	3

Second Semester

MBC	3320	Medicinal Chemistry II	2
MBC	3560	Physiological Chemistry II	3
PHCL	3730	BSPS Pharmacology II	3
BUAD	3010	Principles of Marketing	3
ACTG	1040	Principles of Financial Accounting	or
BUAD	2040	Financial Accounting Information	3
BUAD	2060	Data Analysis for Business	or
MATH	2630 or 2600 or equiv.		3

Summer Between P1 and P2 Years

PHPR	4780	Internship in Pharmacy Administration	6-12

P2 Year

First Semester

PHCL	4810	BSPS Pharmacology III	3
PHPR	4600	Seminar in Pharmacy Administration	1
BUAD	2070	Appl. of Stats in Bus Decision-making	3
PSLS	3440	Sales	3
PSLS	3450	Acct & Territory Management	3
ACTG	1050	Principles of Management Accounting	or
BUAD	2050	Accounting for Business Decision Making	3

Second Semester

PHPR	4550	Analysis of Pharm. Environment	3
BUAD	3020	Principles of Mfg. & Service Systems	3
BUAD	3040	Prin. of Financial Management	3
PSLS	4740	Advanced Sales	3

PSLS	3080	Purch. & Busi. Rela. Mgmt	or
PSLS	4710	Sales Force Leadership	3
BUAD	1020	Microcomputer Applications in Business	or
CMPT	1100	Computer Information Appli or equivalent	3

* This course is not required of students accepted to PHAM before Fall 2010.
[1]This track will enable students to have double minors and fulfill the prerequisites for the MBA program with grades of "C" (2.0) or higher in all BUAD and PSLS courses listed in this curriculum. To be admitted to the MBA program students must successfully complete the GMAT prior to application.

International Business/Business Administration Minors & MBA Track Option[1]

P1 Year

First Semester

MBC	3310	Medicinal Chemistry I	2
MBC	3550	Physiological Chemistry I	3
PHCL	3700	Pharmacology I	3
PHPR	3260	Pharmacy Healthcare Administration I*	2
BUAD	2080	Global Environment of Business	3
ECON	1150	Principles of Macroeconomics	3

Second Semester

MBC	3320	Medicinal Chemistry II	2
MBC	3560	Physiological Chemistry II	3
PHCL	3730	BSPS Pharmacology II	3
BUAD	3030	Manage. & Behave. Process in Orgs.	3
BUAD	2040 or ACTG 1040		3
BUAD	1020 or CMPT 1100 or equivalent		3

Summer Between P1 and P2 Years

PHPR	4780	Internship in Pharmacy Administration	6-12

P2 Year

First Semester

PHCL	4810	BSPS Pharmacology III	3
PHPR	4600	Seminar in Pharmacy Administration	1
BUAD	3010	Principles of Marketing	3
BUAD	3040	Prin. of Financial Management	3
IBUS	3600	International Management[2]	3
ACTG	1050	Principles of Management Accounting	or
BUAD	2050	Accounting for Business Decision Making	3
BUAD	2060	Data Analysis for Business	or
MATH 2630 or 2600 or equiv.			3

Second Semester

PHPR	4550	Analysis of Pharm. Environment	3
BUAD	2070	Appl. of Stats in Bus Decision Making	3
BUAD	3020	Principles of Mfg. & Services Sys.	3
FINA	3500	International Business Finance[2]	3
MKTG	3140	International Marketing[2]	3

* This course is not required of students accepted to PHAM before Fall 2010.
[1]This track will enable students to fulfill the prerequisites for the MBA program with grades of C (2.0) or higher in all BUAD courses listed above. To be admitted to the MBA program, students must successfully complete the GMAT prior to application.
[2]If IBUS 3150 is taken for non-U.S. culture diversity studies, students only need to take two of these three courses.

B.S.P.S. Internship Description

All four majors in the bachelor of science in pharmaceutical sciences degree program require real-life workplace internships 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 project supervisor. A brief paper describing their role in the project is submitted to the coordinator for their major following completion of the practicum.

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 on 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. Students who have completed a five year B.S. in Pharmacy degree and who wish to obtain a Pharm.D. degree should see the graduate section of the catalog.

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 137 semester hours is required for graduation with the bachelor of science in pharmaceutical sciences-Pharm.D. track degree. The curriculum is outlined below.

Preprofessional Division Requirements

First Year

Fall Semester

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

Sping Semester

BIOL	2170	Fundamentals of Life Sci. II	4
BIOL	2180	Fundamentals of Life Sci. Lab II	1
CHEM	1240	General Chemistry II	4
CHEM	1290	General Chemistry Lab II	1
MATH	1760	Calculus for the Life Sciences II	3
UT Core Requirement (ENG 1130 or equivalent)*			3

Second Year

Fall Semester

CHEM	2410	Organic Chemistry I	3
CHEM	2460	Organic Chemistry Lab I	1
PHCL	2600	Funct. Anat. & Pathophysiology I	4
PHYS	1750	Introduction to Physics or equiv	4
UT Core Requirement (PSY 1010 *or* SOC 1010)*			3
UT Core Requirement (Diversity/Multicultural)*			3

Spring Semester

CHEM	2420	Organic Chemistry II	3
CHEM	2470	Organic Chemistry Lab II	1
PHCL	2620	Funct. Anat. & Pathophysiology II	4
UT Core Requirement (ECON 1200)*			3
UT Core Requirement (Humanities/Fine Arts)*			3
UT Core Requirement (Humanities/Fine Arts)**			3

*Suggested sequence

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

Professional Division Requirements

PPT: Pathophysiology and Pharmacotherapy
PPD: Professional Practice Development
PHCAD: Pharmacy Health Care Administration
IPPE: Introductory Pharmacy Practice Experience
APPE: Advanced Pharmacy Practice Experience

P1 Year

Fall Semester

MBC	3310	Medicinal Chemistry I	2
MBC	3550	Physiological Chemistry I	3
PHCL	3700	Pharmacology I	3
PHPR	3130	PPT-1	2
PHPR	3070	PPD-1	4
PHPR	3260	PHCAD-1	2
PHPR	3920	Introductory Pharmacy Practice Experience 1.	1

Spring Semester

MBC	3320	Medicinal Chemistry II	2
MBC	3560	Physiological Chemistry II	3
MBC	3800	Microbiology & Immunology	3
MBC	3850	Microbiology & Immunology Lab	1
PHCL	3720	Pharmacology II	2
PHPR	3140	PPT-2	2
PHPR	3080	PPD-2	4
PHPR	3920	Introductory Pharmacy Practice Experience 1.	1

P2 Year

Fall Semester

PHPR	4160	Pharmacokinetics	3
PHCL	4700	Pharmacology III	2
PHPR	4070	PPD-3	4
PHPR	4130	PPT-3	4
PHPR	4920	Introductory Pharmacy Practice Experience 2.	1
		Undergraduate Professional Electives*	3

Spring Semester

MBC	4300	Medicinal Chemistry III	2
PHCL	4720	Pharmacology IV	2
PHPR	4330	Research Design & Drug Literature Eval I	2
PHPR	4080	PPD-4	4
PHPR	4140	PPT-4	3
PHPR	4520	PHCAD-2	2
PHPR	4920	Introductory Pharmacy Practice Experience 2.	1

* A total of 3 credit hours of Undergraduate Professional Electives is required

Note: At the end of the P2 year, students are candidates for a B.S. degree in pharmaceutical sciences leading toward a Pharm.D. degree.

P3 Year

Summer Semester Immediately Following P2 Year

PHPR	6120	PPT-5	4
PHPR	6920	IPPE-3	1
Graduate Professional Electives*			2, 3 or 5

Fall Semester

MBC	5300	Molecular Basis of Cancer Chemotherapy	1
PHPR	5300	Design & Applications of Cancer Chemo.	1
PHPR	6070	PPD-5	2
PHPR	6130	PPT-6	4
PHPR	6160	Advanced Applied Pharmacokinetics	3
PHPR	6260	PHCAD-3	1
PHPR	6610	Seminar I	1
PHPR	6340	Research Design & Drug Literature Eval 2	2
PHPR	6920	Introductory Pharmacy Practice Experience 3.	1
Graduate Professional Electives*			2-3

Spring Semester

MBC	6320	Neurological & Psychiatric Drugs	1
PHCL	6320	Neurological & Psychiatric Pharmacology	1
PHPR	6080	PPD-6	2
PHPR	6140	PPT-7	4
PHPR	6250	Self-care	4
PHPR	6280	PHCAD-4	2
PHPR	6310	Jurisprudence & Ethics	1
Graduate Professional Electives*			2-3

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

P4 Year

Fall Semester:

PHPR	8620	Seminar II (Fall or Spring)	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

Option of graduate elective (if not completed in P3)
By DL if not in PHPR 8620 Seminar II

Spring Semester

PHPR	8620	Seminar II (Fall or Spring)	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

Option of graduate elective (if not completed in P3)
By DL if not in PHPR 8620 Seminar II

Note: At the end of the P4 year, students are candidates for a Pharm.D. degree.

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 College of Pharmacy 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 College of Pharmacy or University of Toledo GPA calculations.

College of Pharmacy
Research with individual faculty (must be arranged before registering)

MBC	4910	Problems in Biomedicinal Chemistry	1-3
MBC	4900	Honors Seminar Med & Biol Chem,	1-3
MBC	4960	Honors Thesis Med & Biol Chem.	2-5
PHCL	4910	Problems in Pharmacology	1-3
PHCL	4900	Honors Seminar in Pharmacology	1-3
PHCL	4960	Honors Thesis in Pharmacology	2-5
PHPR	3730	Chemical Dependency & The Pharmacist	3
PHPR	4590	Readings Access & Cultural Competence	2
PHPR	4910	Pharmacy Practice Problems	1-5
PHPR	4900	Honors Seminar in Pharmacy Practice	1-3
PHPR	4960	Honors Thesis in Pharmacy Practice	2-5
PHCL	4730	Toxicology I	3
PHCL	4750	Toxicology II	3
PHCL	4630	Cancer Chemotherapy	3
MBC	4710	Targeted Drug Design	3

MBC 4710 is only for students seeking double B.S.P.S. major.

College of Arts and Science

BIOL	3010	Molecular Genetics	3
BIOL	3210	Human Nutrition	3
BIOL	4110	Human Genetics	3
BIOL	4210	Molecular Basis of Disease	3
PHIL	3310	Science and Society	3
MATH	2600	Introduction to Statistics	3
PHIL	3370	Medical Ethics	3
PSC	4330	Health Care Policy	3

College of Business

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

College of Health Science and Human Service

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

Pharm.D. 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 College of Pharmacy 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 College of Pharmacy 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	Biomedicinal Chemistry	4
MBC	6420	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

PHCL

PHCL	5630	Cancer Chemotherapy	3
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 - Administration

PHPR	5590	Readings Access & Cultural Competence	2
PHPR	5810	Finance & Personal Planning for Pharmacists	1
PHPR	5990	Problems in Pharmacy Practice	1 to 6
PHPR	6530	Research Methods in Pharmacy Practice	3
PHPR	6600	Seminar in Administrative Pharmacy	1
PHPR	6670	Chemical Dependency & The Pharmacist	3
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	6980	Special Topics	1 to 5

PHPR - Industrial

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	5990	Problems in Pharmacy Practice	1 to 6
PHPR	6950	Seminar in Industrial Pharmacy	1
PHPR	6980	Special Topics	1 to 5

PHPR - Clinical

PHPR	6980	Special Topics	1 to 5
PHPR	8540	Geriatric Monitoring Principles	3

Additional Recommendations

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	528	Theories of Addictive Behavior	3
PSC	5330	Healthcare Policy	3
PSY	6600	Behavioral Neuroscience	3
PUBH	633	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

College of Pharmacy Faculty

Department of Medicinal and Biological Chemistry

James Bretz , 2007, instructor
B.S. Binghamton University in Binghamton NY; Ph.D. Michigan State University

Amanda C. Bryant-Friedrich, 2007, associate professor
B.S. North Carolina Central University; M.S. Duke University; Dr. rer. nat., Ruprecht-Karls Universität

Tamara R Castaneda, 2010, assistant professor (research track)
B.S. and Ph.D. University Complutense of Madrid , Madrid , Spain

Paul W. Erhardt, 1994, professor
B.A., Ph.D., University of Minnesota

Max O. Funk, 1987*, distinguished university professor
B.S., Pennsylvania State University; Ph.D., Duke University

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 and executive associate dean
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

Jon R. Kirchhoff, 1997*, professor
B.A., State University of New York - Cortland; Ph.D., Purdue University

Richard W. Komuniecki, 1997*, professor
A.B., Holly Cross College; M.S., Ph.D., University of Massachusetts

Marcia F. McInerney, 1991, distinguished university professor and chair
B.A., University of Connecticut; M.S., Case Western University; Ph.D., University of Michigan

William S. Messer Jr., 1985*, professor
B.S., Springfield College; M.S., Ph.D., University of Rochester

Sonia Najjar, 1994, professor **
B.A. San Francesco State University MS San Francesco State University; Ph.D. Stanford University Medical School

Surya Nauli, 2006, assistant professor**
B.S. Minnesota State University Ph.D. Loma Linda University

Susanne Nonekowski, 2009, lecturer
B.S. State University of New York College (SUNY) at Buffalo; M.S. University of Michigan; Ph.D. University of Michigan

Steven M. Peseckis, 1994, associate professor
B.S., Dartmouth College; Ph.D., Massachusetts Institute of Technology

A. Alan Pinkerton, 1987*, professor
R.I.C., Brighton College of Technology; Ph.D., University of Alberta

Zahoor Ahmad Shah, 2009, assistant professor
B.S., University of Kashmir; M.S. Hamdard University; Ph.D. Hamdard University

James T. Slama, 1991, professor
A.B., Cornell University; Ph.D., University of California

L.M.V. Tillekeratne, 2006, associate professor
D.Phil., Oxford University

Hermann von Grafenstein, 2002, associate professor
M.S., M.D., Ludwig Maximilian University; Ph.D., Max Planck Institute of Biochemistry, Munich and the University of Konstanz

Katherine A. Wall, 1991, professor
B.S., Montana State University; Ph.D., University of California

*Joint appointment
** Adjunct appointment

Department of Pharmacology

Salahuddin Ahmed, 2009, assistant professor
B.S., Rajasthan University, India; M.S., Hamadard University, India; Ph.D., Hamdard University, India

Kenneth A. Bachmann, 1973, distinguished university professor emeritus
B.S. Pharm., Ph.D., The Ohio State University; R.Ph.

Johnnie L. Early II, 2000, professor and dean
B.S. Pharm., Mercer University; M.S., Ph.D., Purdue University; R.Ph.

Alan Goodridge, 2003*, professor
B.S. Tufts University; M.S., Ph.D., University of Michigan

Miles Hacker, 2002, professor
B.S., Murray State University; Ph.D., University of Tennessee

Ezdihar A.M. Hassoun, 1995, professor
B.S. Pharm., University of Baghdad; Ph.D., University of Uppsala, Sweden

Christine N. Hinko, 1979, professor and associate dean for student affairs
B.A., Clarion State College; Ph.D., The Ohio State University

Ming-Cheh Liu, 2007, associate professor
B.S., National Taiwan University; M.S., Ph.D., The University of Georgia.

William S. Messer Jr., 1985, professor and chair
B.S., Springfield College; M.S., Ph.D., University of Rochester

Surya Nauli, 2006, assistant professor
B.S., Minnesota State University; Ph.D. Loma Linda University

Youssef Sari, 2010, assistant professor
B.S. Denis Diderot University; M.S. Orsay University; Ph.D. Pierre and Marie Curie University

Robert J. Schlembach, 1954, professor emeritus
B.S. Pharm., The University of Toledo; M.S., Ph.D., Purdue University; R.Ph.

Hermann von Grafenstein, 2002*, associate professor
M.S., M.D., Ludwig Maximilian University; Ph.D., Max Planck Institute of Biochemistry, Munich and the University of Konstanz

Donald B. White, 1995*, professor
B.S., University of California - Los Angeles; M.S., Ph.D., University of California - Irvine

Frederick E. Williams, 2002, associate professor
B.S., University of Michigan; M.H.S., Grand Valley State University; Ph.D., Medical College of Ohio

*Joint appointment

Department of Pharmacy Practice

Folasade Akala, 2005, clinical assistant professor; clinical lecturer
Pharm.D., Howard University; R.Ph.

Kenneth S. Alexander, 1972, professor
B.Sc. Pharm., M.Sc., Philadelphia College of Pharmacy and Science; Ph.D., University of Rhode Island; Ed Sp., The University of Toledo; R.Ph.

Robert A. Bechtol, 2008, clinical assistant professor, clinical lecturer
B.S.P.S., M.S., The University of Toledo

Norman F. Billups, 1977, professor and dean emeritus
B.S. Pharm., M.S., Ph.D., Oregon State University; R.Ph.

Curtis D. Black, 1990, Merck professor of clinical pharmacy
B.S. Pharm., The University of Toledo; M.S., Ph.D., Purdue University; R.Ph.

Mary C. Borovicka, 2002, associate professor and director of pharmacy partnership programs
B.S. Pharm., Pharm.D., The University of Toledo; R.Ph., BCPS, BCPP

Diane M. Cappelletty, 2001, associate professor
B.S. Pharm., Pharm.D., The Ohio State University; R.Ph.

Mariann D. Churchwell, 2005, assistant professor
B.S. Pharm., Pharm.D., Wayne State University; R.Ph., BCPS

Angeline Gilis, 1996, lecturer
B.S. Pharm., The University of Toledo; R.Ph.

Charles I. Hicks, 1971, professor emeritus
B.S. Pharm., M.S., University of Iowa; R.Ph.

Monica G. Holiday-Goodman, 1988, professor
B.S. Pharm., Ph.D., Northeast Louisiana University; R.Ph.

Rose Jung, 2008, clinical associate professor, clinical lecturer
B.S. Pharm, Rutgers University; Pharm.D.., St. Johns University; MPH, The University of Toledo; R.Ph., BCPS

Gayle Kamm, 2008, clinical assistant professor; clinical lecturer
B.S. Pharm., Pharm.D., The University of Toledo; R.Ph., BCPS

Megan A. Kaun, 2006 clinical assistant professor; clinical lecturer, and director of advanced pharmacy practice experiences
Pharm.D., The University of Toledo; R.Ph., BCPS

Aaron J. Lengel, 2008, clinical assistant professor, clinical lecturer
Pharm.D., The University of Toledo; R.Ph.

Steven J. Martin, 1997, professor and chair
B.S. Pharm., Pharm.D., Ferris State University; R.Ph., BCPS

Laurie S. Mauro, 1985, professor
B.S. Pharm., Ohio Northern University; Pharm.D., The Ohio State University; R.Ph.

Vincent F. Mauro, 1985, professor
B.S. Pharm., Ohio Northern University; Pharm.D., The Ohio State University; R.Ph.

Jerry Nesamony, 2008, assistant professor
B. Pharm., Medical College, University of Kerala; M. Pharm. Medical College, University of Kerala; Ph.D., The University of Louisiana at Monroe

Martin J. Ohlinger, 2002, clinical assistant professor; clinical lecturer
B.S., College of William and Mary; B.S. Pharm, Pharm.D., Virginia Commonwealth University/MCV; R.Ph., BCPS

Michael J. Peeters, 2005, clinical assistant professor; clinical lecturer
B.S. Pharm., University of Alberta; Pharm.D., University of Washington; R.Ph., BCPS

Sharrel L. Pinto, 2005, assistant professor
B.S. Pharm, D.M.M. University of Mumbai; M.S. Pharm., The University of Toledo; Ph.D., The University of Florida

Mary F. Powers, 2002, associate professor
B.S. Pharm., The University of Toledo; Ph.D., Medical College of Ohio; R.Ph.

Eric G. Sahloff, 2003, associate professor
B.A., B.S. Pharm., Pharm.D., The University of Toledo; R.Ph.

Kimberly Schmude, 2002, clinical assistant professor, clinical lecturer
B.S. Pharm., Pharm.D., The University of Toledo; R.Ph.

Amie L. Smith, 2008, clinical assistant professor, clinical lecturer and co-director of introductory pharmacy practice experiences
Pharm.D., Ferris State University; R.Ph.

Anita T. Stonehill, 2008, clinical assistant professor, clinical lecturer
B.S. Pharm., Pharm.D., The University of Toledo; R.Ph.