

COLLEGE OF PHARMACY

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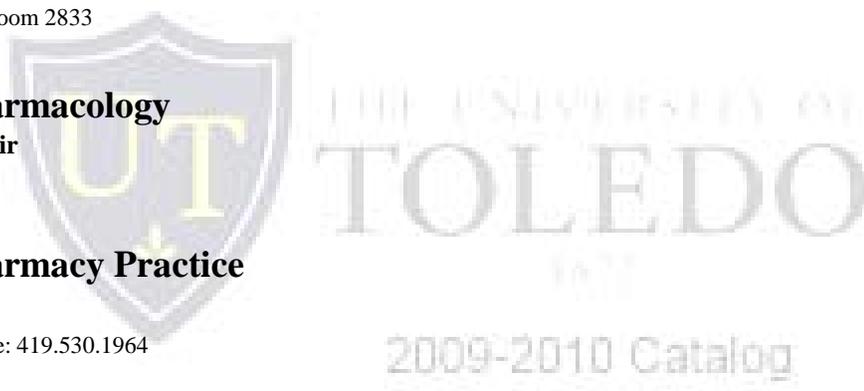
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MISSION STATEMENT

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. 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 bachelor of science in pharmaceutical sciences program. For the entry-level Pharm.D. and the four-year bachelor of science in pharmaceutical sciences 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 bachelor of science in pharmaceutical sciences programs. Automatic admission to the P1 year of the curriculum will be contingent on successful completion of the first and second preprofessional years, while maintaining specific scholastic 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. in pharmaceutical sciences or the Pharm. D. program. 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.

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 family 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

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. A preprofessional division student will not be allowed to fulfill requirements for the professional divisions by enrollment in organic chemistry and physics during the summer prior to the first professional division 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 PPHR 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 General Section of this catalog 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 in the General Information section of this catalog 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 Policies in the General Section of this catalog 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 pharmacy is considered to be very important for the proper performance of professional responsibility as a member of the health team. 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, such behavior may present a hazard not only to the student, but also to patients. 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, pharmaceuticals, 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. Students whose cumulative pharmacy core-curriculum GPA falls below a 3.0 (beyond the first semester of the P1 year) will be placed on probation and allowed one semester to restore their cumulative pharmacy core-curriculum GPA to a level of 3.0 or better. A student with two or more consecutive semesters with a 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) 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 of 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 minimum GPA of 3.0. This 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 courses (see below). Students whose semester pharmacy curriculum GPA falls below 3.0 will be given an academic warning. Students whose cumulative pharmacy curriculum GPA falls below 3.0 (beyond the first semester of the P3 year) will be placed on probation and allowed one semester to restore their GPA to a cumulative pharmacy curriculum level of 3.0 or better. A student with two or more consecutive semesters with a cumulative pharmacy 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.

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 dean on advice from College of Academic Performance

*Required P3-P4 Level Non-APPE Courses					
MBC 5300	PHPR 5300	PHPR 6120	PHPR 6160	PHPR 6280	PHPR 6310
MBC 6320	PHPR 6070	PHPR 6130	PHPR 6250	PHPR 6310	PHPR 6340
PHCL 6320	PHPR 6080	PHPR 6140	PHPR 6260	PHPR 6340	PHPR 6340

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, pharmaceuticals 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 cumulative pharmacy curriculum GPA of 3.0 and a minimum GPA of 3.0 for the semester.

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. electives

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 Doctor of Pharmacy (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) 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. 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 General Section of this catalog 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 professional division courses. The only pharmacy courses a preprofessional student is permitted to take through the College of Pharmacy are PPHP 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, pharmaceuticals, 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 bachelor of science in pharmaceutical sciences 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
PPHR 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
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¹To be chosen from the MBC electives list.

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

³Internship 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 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.....	6-8
MBC 4950 Research in Medicinal Chemistry—Honors.....	6-8
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 4150 Biopharmaceutics/Pharmacokinetics.....	4
PHCL 4630 Cancer chemotherapy.....	3

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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: (Recommended MBC 3100).....	1

Summer between P1 and P2 Year

PHPR 4880 Internship in Pharmaceutics.....	6-12
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P2 Year

First Semester

CHEM 3310 Analytical Chemistry.....	2
PHPR 4160 Pharmacokinetics.....	3
PHCL 4810 BSPS Pharmacology III.....	3
Pharmaceutical or General Electives.....	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.....	2-6

†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).....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 Lab².....1
 PHCL 4750 Toxicology II.....3
 Major Elective (Recommended MBC 3100).....1
 Major Elective3

P2 Year

First Semester

MBC 4710 Targeted Drug Design.....3
 PHCL 4810 BSPS Pharmacology III.....3
 Major Elective¹9

Second Semester

PHCL 4780 Internship in Pharmacology/Toxicology³.....6-12

¹To be chosen from the PTOX electives list.

²Required for internship and only offered in spring.

³Internship 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 4720 Pharmacology IV.....	3
PHCL 4760 Toxicokinetics.....	3
PHCL 4800 Human-Xenobiotic Interactions.....	3
PHCL 4900 Hrs 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 BPS Pharmacology II.....	3
PHPR 4550 Analysis of Pharm. Environment.....	3

ACTG 1040 Principals of Financial Accounting.....or
 BUAD 2040 Financial Accounting Information.....3
 Major Elective² 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 Elective²2-3

Second Semester

PHPR 4780 Internship in Pharmacy Adms.....6-12

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

¹PHPR 4520 or MKTG 3880 or 4540 may be taken as an alternative.

²Major 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

³ 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 Marketing¹.....3
 ACTG 1040 Principles of Financial Accounting¹.....or
 BUAD 2040 Financial Accounting Information¹.....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 Orgs¹.....3
 BUAD 3040 Prin. of Financial Management¹.....3
 BUAD 2050 Accounting for Business Decision Making¹..or
 ACTG 1050¹ Principles of Management Accounting¹.....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 Electives.....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.

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

²PHPR 4520 or MKTG 3880 or 4540 may be taken as an alternative.

³Choose from business administration minor requirements listed by the College of Business administration. Recommend BUAD 3020 or 2070.

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 Macroeconomics3
 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 BPS Pharmacology II.....3
 BUAD 3010 Principles of Marketing.....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 BPS Pharmacology III.....3
 PHPR 4600 Seminar in Pharmacy Administration.....1
 BUAD 3030 Manage. & Behav. Process in Orgs.....3
 PSL 3440 Sales.....3
 PSL 3450 Acct. & Territory Management.....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
 PSL 4740 Advanced Sales.....3
 PSL 3080 Purchasing & Business Relation Mgmt.....or
 PSL 4710 Salesforce Leadership.....3
 PHPR 4550 Analysis of Pharmaceutical Environment.....3

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

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

²PHPR 4520 or MKTG 3880 or 4540 may be taken as an alternative.

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
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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 Environment1.....	3
BUAD 2070 Application of Statistics.....	3
FINA 3500 International Business Finance2.....	3
IBUS 3600 International Management2.....	3
MKTG 3140 International Marketing2.....	3

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

1PHPR 4520, MKTG 3880 or MKTG 4540 may be taken as an alternative.

2If 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 Marketing1.....	3
ACTG 1040 Principles of Financial Accounting1.....or	
BUAD 2040 Financial Accounting Information1.....	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 Sales₁.....3
 PSLs 3450 Account & Territory Management₁.....3
 ACTG 1050 Principles of Management Accounting₁.....^{or}
 BUAD 2050 Accounting for Business Decision-Making₁.....3
 BUAD 3030 Manage. & Behav. Process Orgs₁.....3

Second Semester

PHPR 4550 Analysis of Pharmaceutical Environment₂.....3
 BUAD 2070 Application of Statistics₃.....3
 BUAD 3040 Prin. of Financial Management₁.....3
 PSLs 4740 Advanced Sales₁.....3
 PSLs 3080 Purch. & Busi. Rela. Mgmt₁.....^{or}
 PSLs 4710 Sales Force Leadership₁.....3

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

¹A grade of C or higher is required for the minors.

²PHPR 4520 or MKTG 3880 or 4540 may be taken as an alternative.

³If 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 Orgs₁.....3
 ACTG 1040 Principles of Financial Acct₁.....^{or}
 BUAD 2040 Financial Accounting Information₁.....3

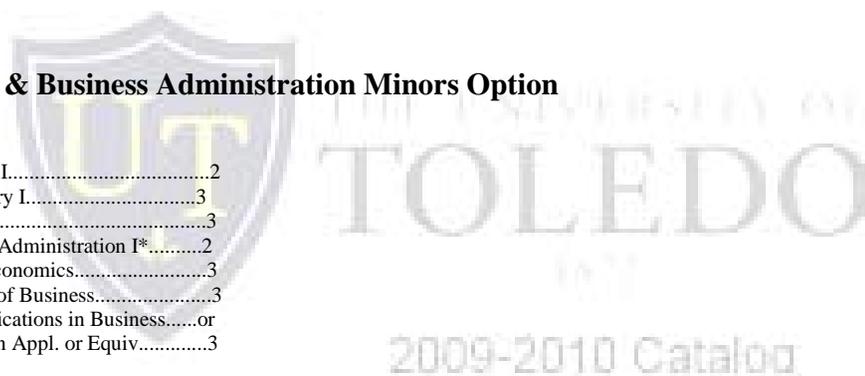
Summer Between P1 and P2 Years

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 Marketing₁.....3
 BUAD 3040 Prin. of Financial Management₁.....3



ACTG 1050 Principles of Management Accounting¹.....or
 BUAD 2050 Accounting for Business Decision-Making¹.....3
 BUAD 2060 Data Analysis for Business.....or
 MATH 2600 or 2630 or equiv.....3

Second Semester

PHPR 4550 Analysis of Pharmaceutical Environment².....3
 BUAD 2070 Appl. of Stats in Bus Decision Making¹.....3
 FINA 3500 International Business Finances.....3
 IBUS 3600 International Managements.....3
 MKTG 3140 International Marketings.....3

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

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

²PHPR 4520, MKTG 3880 or MKTG 4540 may be taken as an alternative.

³If 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 Option¹

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 Macroeconomics3

Second Semester

MBC 3320 Medicinal Chemistry II.....2
 MBC 3560 Physiological Chemistry II.....3
 PHCL 3730 BPS 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 BPS 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.

¹This 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

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 BPS 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
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P2 Year

First Semester

PHCL 4810 BPS 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.

1This 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.

2PHPR 4520 MKTG 3880 or 4540 may be taken as an alternative.

International Business/Business Administration Minors & MBA Track 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
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
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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	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. Environments	3
BUAD 2070 Appl. of Stats in Bus Decision Making	3
BUAD 3020 Principles of Mfg. & Services Sys.	3
FINA 3500 International Business Finance	3
MKTG 3140 International Marketing	3

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

¹This 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.

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

³PHPR 4520, MKTG 3880 or MKTG 4540 may be taken as an alternative.

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

Spring 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
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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

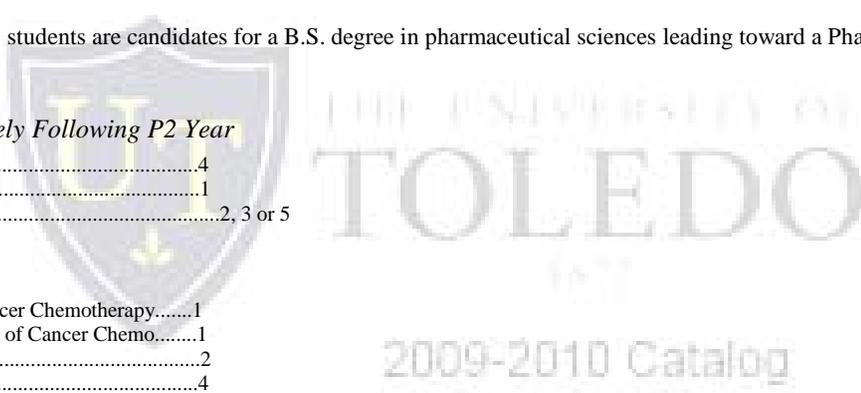
Fall Semester

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 VIII4
 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.

College of Pharmacy

Research with individual faculty (must be arranged before registering)

MBC 4910 Problems in Biomedical Chemistry1-3
 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 Genetics3
 BIOL 3210 Human Nutrition3
 BIOL 4110 Human Genetics3
 BIOL 4210 Molecular Basis of Disease.....3
 PHIL 3310 Science and Society.....3
 MATH 2600 Introduction to Statistics.....3
 PHIL 3370 Medical Ethics3
 PSC 4330 Health Care Policy.....3

College of Business

BUAD 2040 Financial Accounting Information.....3
 BUAD 2050 Accounting Business Decision Making3
 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 Business3

College of Health Science and Human Service

COUN 3140 Substance Abuse Prevention and
 Community Programming3
 HCAR 4510 Medical and Legal Aspects of Healthcare3



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.

MBC

MBC 5100/ Research Practices in Medicinal Chemistry.....	1
7100	
MBC 5380 Medicinal & Poisonous Plants.....	3
MBC 5620/ Biochemical Techniques.....	2
7620	
MBC 6100/ Advanced Immunology.....	2
8100	
MBC 6190/ Advanced Medicinal Chemistry.....	4
8190	
MBC 6200/ Biomedical Chemistry.....	4
8200	
MBC 6420 Protein Chemistry/CHEM 6510/8510.....	2 or 4
MBC 6430/ Nucleic Acid Chem/CHEM 6530/8530...2 or 4	
8430	
MBC 6440/ Enzymology/CHEM 6520/8520.....	2 or 4
8440	
MBC 6750/ Bioorganic Chemistry: Chemical	
8750 Approaches to Enzymes.....	3
MBC 6800/ Methods in Biotechnology.....	3
8800	

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 5810 Finance & Personal Planning for Pharmacists I	
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 Health4
 COUN 6470/8470 Drugs and Mental Health Counseling4
 EDP 5210 Child Behavior and Development3
 EDP 5230 Adult Development3
 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 Behavior3
 PSC 5330 Healthcare Policy3
 PSY 6600 Behavioral Neuroscience.....3
 PUBH 633 Public Health and Aging.....3
 SOC 5160 Health and Gender3

College of Pharmacy Faculty

Department of Medicinal and Biological Chemistry

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

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

Max O. Funk, 1987*, 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

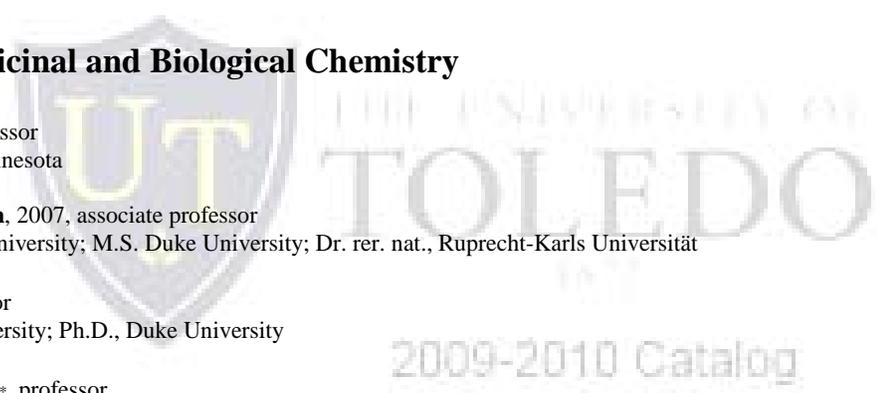
Channing L. Hinman, 1985, associate professor emeritus
 B.S., Brigham Young University; Ph.D., University of California - Los Angeles

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., Holy Cross College; M.S., Ph.D., University of Massachusetts

Marcia F. McInerney, 1991, 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

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

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.

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

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, visiting assistant professor
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, associate professor B.S. Pharm., Ph.D., Northeast Louisiana University; R.Ph.

Rose Jung, 2008, visiting associate professor

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, visiting assistant professor

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.

Jessica J. Shimman, 2006, clinical assistant professor; clinical lecturer, and co-director of introductory pharmacy practice experiences

Pharm.D., The University of Toledo; R.Ph., BCPS

Amie L. Smith, 2008, visiting assistant professor and co-director of introductory pharmacy practice experiences

Pharm.D., Ferris State university; R.Ph.

Anita T. Stonehill, 2008, visiting assistant professor

B.S. Pharm., Pharm.D., The University of Toledo; R.Ph.

Dustin G. Zeigler, 2008, clinical assistant professor, clinical lecturer

B.S. Pharm., Pharm.D., The University of Toledo; R.Ph., BCPS

