

Concentration - Medicinal Chemistry

- [B.S. in Pharmaceutical Sciences](#)
- [Track - Nonpractice Curricular Tracks](#)
- [Concentration - Medicinal Chemistry](#)
- [Degree Requirements](#)

B.S. in Pharmaceutical Sciences **Description**

The B.S.P.S. degree may be taken as a practice or a nonpractice track. The practice track is designed to prepare a student for entry into the Pharm.D. professional program. The nonpractice tracks are designed to prepare a student for a pharmacy-related career (e.g., research or marketing) or graduate school.

Minimum Total Credit Hours: 142

Goals/Mission Statement

On the baccalaureate level, the school shall foster an environment where students can learn and apply the principles and theories related to the pharmaceutical sciences and acquire the knowledge, skills, and attitudes in their chosen discipline such that each can enter and succeed in a professional career in the pharmaceutical sciences, or continue studies in areas including, but not limited to, the Doctor of Pharmacy program or graduate studies in the pharmaceutical sciences.

General Education Requirements

The general education/core requirements for the B.S.P.S. degree include Engl 101 and Engl 102/Liba 102; Bisc 160, 161, 162, 163; Chem 105, 115, 106, 116, 221, 225, 222, 226; Phys 213, 223, 214, 224; Math 261; Spch 102 or 105; Econ 202; Math 115; 6 hours of behavioral/social sciences; 9 hours of humanities and fine arts, with at least 3 hours from each area.

Course Requirements

The third year (P3, the first professional year) requirements include Phcl 341 and 342 (Human Physiology/Pathophysiology), Phcl 343 (Biochemical Foundations of Therapeutics); Phar 330 (Pharmaceutical Calculations), Phar 331 and 332 (Basic Pharmaceutics); Phad 391 and 392 (Pharmacy Administration); Prct 350 (Pharmacy Orientation); Medc 317 (Pharmacogenetics and Pharmacoinmunology); and Phil 326 (Pharmacy Ethics).

Students must then complete either the fourth year (P4) practice track or one of the P4 nonpractice tracks; course requirements for P4 are described on the track sections.

Track - Nonpractice Curricular Tracks **Description**

Completion of a B.S.P.S. nonpractice track (P4 year) may occur in the following areas of concentration-medicinal chemistry, pharmacology/toxicology, or drug discovery and development.

Goals/Mission Statement

The nonpractice track curricula are designed to provide sufficient background in a pharmaceutical science discipline to prepare the student for entry into a graduate degree program (M.S. or Ph.D.) in that respective discipline. They provide career preparation for students interested in pharmacy-related careers, but not desiring to become pharmacists.

General Education Requirements

General education course requirements are covered in the first two years of the B.S.P.S. degree program. Entry into each concentration consists of successful completion of the first three years of the B.S.P.S. degree program, followed by competitive admission.

Course Requirements

The nonpractice track curricula for concentrations in medicinal chemistry, pharmacology/toxicology, or drug discovery and development are identical to the practice track curriculum for the first three years, but differ dramatically in the fourth year. The required P4 courses are detailed under the specific concentrations.

Concentration - Medicinal Chemistry **Description**

A concentration with specialization in medicinal chemistry consists of the completion of the first three years of the B.S.P.S. curriculum followed by completion of the fourth-year curriculum as described below. The degree program emphasizes advanced medicinal chemistry, synthetic chemistry, laboratory skills, and elective areas that can include natural product chemistry, pharmacology, biochemistry, organic chemistry, analytical chemistry, or biology. The degree program provides an environment for the student to conduct basic and applied research and an opportunity to improve his or her science communication skills.

Goals/Mission Statement

A graduate of this track should possess the knowledge and skills necessary to compete for positions in the pharmaceutical, agrochemical, and specialty chemical industries. Also, this graduate should have the education and training required for admission into graduate programs in medicinal chemistry and related fields.

General Education Requirements

Refer to general education requirements for the B.S.P.S. degree.

Course Requirements

Requirements for this concentration are completion of the first professional year (P3) curriculum in the B.S.P.S. program followed by Medc 501 and 502 (Advanced Medicinal Chemistry); Medc 503 (Medicinal Chemistry Research Methodology); Medc 507 (Organic Chemistry of Drug Synthesis); Medc 541 and 542 (Problems in Medicinal Chemistry); Medc 543 and 544 (Seminar on Current Medicinal Chemistry Topics); Chem 524 (Intermediate Organic Chemistry) or approved elective; 6-8 hours of approved electives.



Other Academic Requirements

Admission: Because medicinal chemistry is a laboratory-intensive course of study, the total number of students admitted to the medicinal chemistry track will be limited by the availability of quality laboratory space. Competitive admission to the program depends on: a) A 2.00 GPA or higher obtained on all courses completed during the P3 year of the B.S.P.S. curriculum. b) A minimum of a cumulative 2.50 GPA achieved in 20 credit hours of medicinal chemistry and chemistry courses consisting of General Chemistry I,II (8 hours); Organic Chemistry I, II (8 hours); or approval of the department. c) A C grade minimum on each of the medicinal chemistry and chemistry courses required above, or approval of the department. d) A letter of application indicating the reasons for selecting this track and how it fits into the applicant's future goals along with a completed application form and a successful departmental interview.

Degree Requirements

The academic regulations for this degree program, as entered in the University of Mississippi Catalog, are in effect for the current or selected academic year and semester. The University of Mississippi reserves the right to 1) change or withdraw courses; 2) change rules for registration, instruction, and graduation; and 3) change other regulations affecting the student body at any time.

General Education

REQUIREMENT	HOURS	DESCRIPTION
Bisc 160 - C min	3	Complete Bisc 160 with a grade of C or better.
Bisc 161 - C min	1	Complete Bisc 161 with a grade of C or better.
Bisc 162 - C min	3	Complete Bisc 162 with a grade of C or better.
Bisc 163 - C min	1	Complete Bisc 163 with a minimum grade of C.
Chem 105 - C min	3	Complete Chem 105 with a grade of C or better.
Chem 106 - C min	3	Complete Chem 106 with a grade of C or better.
Chem 115 - C min	1	Complete Chem 115 with a grade of C or better.
Chem 116 - C min	1	Complete Chem 116 with a grade of C or better.
Chem 221 - C min	3	Complete Chem 221 with a grade of C or better.
Chem 222 - C min	3	Complete Chem 222 with a grade of C or better.
Chem 225 - C min	1	Complete Chem 225 with a grade of C or better.
Chem 226 - C min	1	Complete Chem 226 with a grade of C or better.
Econ 202 - C min	3	Complete Econ 202 with a grade of C or better.
First Year Writing I - C min	3	Complete Writ 101 , 100 , or Hon 101 with a grade of C or better.
First Year Writing II - C min	3	Complete Writ 102 , Liba 102 , or Hon 102 with a grade of C or better.
Statistics - C min	3	Complete either Math 115 or Psy 202 with a grade of C or better.
Math 261 - C min	3	Complete Math 261 with a grade of C or better.
Spch 102/105 - C min	3	Complete either Spch 102 or Spch 105 with a grade of C or better.
3 hrs fine arts	3	Complete 3 hours in the area of fine or performing arts. Choose from art history, music, dance, and theatre arts. Studio and workshop courses cannot be used to satisfy this requirement. Acceptable freshman or sophomore-level courses are: AH 101 , AH 102 , AH 201 , AH 202 ; Music 101, Music 102, Music 103, Music 104, Music 105; Dance 200; and Theatre 201.
3 hrs humanities	3	Successfully complete 3 CRH in one of the following areas: African American studies; classical civilization; Gender Studies 103, 201, 333, 311, 390; philosophy; religion; Southern Studies 101, 102; modern language; English; history; or Hon 101 , 102 .
6 hrs social science	6	Successfully complete 6 hours in anthropology, economics, JOUR 101 , political science, psychology or sociology.
Phys 213,214 ,lab (C min)	8	Complete the following courses and labs with a grade of C or better: Phys 213 , Phys 214 , Phys 223 , and Phys 224 .
Add'l humanities/fine art	3	Successfully complete an additional 3 semester hours from the humanities electives or the fine/performing arts electives.

Major Requirements

REQUIREMENT	HOURS	DESCRIPTION
Medc 317 - C min	3	Complete Medc 317 with a grade of C or better.
Phad 391 - C min	3	Complete Phad 391 with a grade of C or better.
Phad 392 - C min	3	Complete Phad 392 with a grade of C or better.



REQUIREMENT	HOURS	DESCRIPTION
Phar 330 - C min	1	Complete Phar 330 with a grade of C or better.
Phar 331 - C min	3	Complete Phar 331 with a grade of C or better.
Phar 332 - C min	3	Complete Phar 332 with a grade of C or better.
Phcl 341 - C min	3	Complete Phcl 341 with a grade of C or better.
Phcl 342 - C min	3	Complete Phcl 342 with a grade of C or better.
Phcl 343 - C min	3	Complete Phcl 343 with a grade of C or better.
Phil 326 - C min	1	Complete Phil 326 with a grade of C or better.
Prct 350 - C min	3	Complete Prct 350 with a grade of C or better.
Select a track		Select a track within the BS in Pharmaceutical Science program.
Resident Major GPA		Please contact your academic advisor for grade point requirements.
Overall Major GPA		Please contact your academic advisor for grade point requirements.

