UNIVERSITY OF SOUTHERN INDIANA
Chemistry and Biochemistry

Pre-Veterinary

Biochemistry Major

The following courses are required for admission to the Purdue University College of Veterinary Medicine: BIOL 141, BIOL 152, BIOL 375/376, BIOL 382, BIOL 434, CHEM 261/262, CHEM 353/354, PHYS 175/176, STAT 241, ENG 101, COM 101 or 107, PSY 201, SOC 121, and a Foreign Language. Requirements vary by university; you should confirm the requirements of each program in which you are interested. The following courses are a typical course of study for a biochemistry major interested in veterinary school:

Fall Year 1	
General Chemistry I (CHEM 261)	4
Principles of Biol (BIOL 141)	4
Calculus I (MATH 230)	3
Rhetoric & Composition I (ENG 101)	3
1st Year Experience (UNIV 101)	1
	16

Spring Year 1	
General Chemistry II (CHEM 262)	4
Botany (BIOL 151) or Zoology (BIOL 152)	3
Intro to Public Speaking (CMST 101/107)	3
Rhetoric & Composition II (ENG 201)	3
Principles of Sociology (SOC 121) (***Core***)	3
	16

Fall Year 2	
Organic Chemistry I (CHEM 353)	4
Botany (BIOL 151) or Zoology (BIOL 152)	3
General Physics I (PHYS 175)	4
Intro to Psychology (PSY 201) (***Core***)	3
Chemistry Seminar (CHEM 218)	1
	15

Spring Year 2	
Organic Chemistry II (CHEM 354)	4
Cell Biology (BIOL 334)	3
General Physics II (PHYS 176)	4
Quantitative Analysis (CHEM 321) (**or Summer)**	4
	15

Fall Year 3	
Biochemistry I (CHEM 431)	4
Chemistry Seminar II (CHEM 318) *(**or** year 4)*	1
Genetics (BIOL 382)	4
Core Elective (LANG 101)	3
Concepts in Wellness and Fitness (KIN 192)	1
	13

Spring Year 3	
Biochemistry II (CHEM 432)	4
Chemistry Seminar III (CHEM 418) *(**or** year 4)*	1
Intro to Research (CHEM 499/BIOL 499)	1
Microbiology (BIOL 375) with Lab (BIOL 376)	4
Core Elective **x 2**	6
	16

Fall Year 4	
Survey of Physical Chemistry (CHEM 361)	4
Instrumental Analysis (CHEM 421)	4
Intro to Research (CHEM 499/BIOL 499)	1
Core Electives	3
Elective	3
	15

Spring Year 4	
CHEM Elective	4
BIOL Elective	4
Core Elective	3
Elective	3
	14

This is a **suggested** sequence of courses. There is some flexibility in this schedule. Courses taken in first year depend on math placement. In order to graduate, you must fulfill 39 credit hours at 300/400 level. *Research courses can be taken in any semester, two are required for the degree

DEPARTMENT FACULTY RESEARCH INTERESTS

Dr. Brian Bohrer (Ph.D. Analytical Chemistry, Indiana University)

Environmental analysis of water samples aiming to detect the presence of agricultural and pharmaceutical pollutants using chromatography and mass spectrometry instrumentation

Dr. Shelly Blunt (Ph.D. Organic Chemistry, University of Iowa)

Synthesis of quinoline alkaloids as breast cancer target agents and nucleosides as HIV/AIDS target agents and asymmetric epoxidations to form chiral drug targets

Dr. Jeannie Collins (Ph.D. Biochemistry, University of Southern Mississippi)

Cytoskeletal proteins involved in motility, structural support, organelle transport and intracellular communication, DNA replication of both slime molds and plants

Dr. Priya Hewavitharanage (Ph.D. Photochemical Sciences, Bowling Green State University)

Synthesis of fluorescent molecules for biological applications such as photodynamic therapy for the treatment of cancer

Dr. Mark Krahling (Ph.D. Analytical Chemistry, University of Wisconsin-Madison)

Elemental analysis using atomic spectroscopy, solid phase extraction & gas chromatography–mass spectrometry, and electrospray ionization mass spectrometry

Dr. Jacob Lutter (Ph.D. Inorganic Chemistry, University of Michigan)

Synthesis of metallacrowns that sensitize emission from trivalent lanthanide ion guests introduced into the macrocyclic core as potential imaging agents, energy upconvertors, and other applications

Dr. Evan Millam (Ph.D. Physical Chemistry, University of Minnesota)

Electronic spectroscopy, ab initio computational chemistry, first principles determination of vibrationally resolved molecular electronic spectra, transition state calculations, calorimetry

Dr. Ken Walsh (Ph.D. Organic Chemistry, University of Bristol)

Synthesis of carbohydrates and analogs, organocatalysis and organic synthesis, adaption of modern synthetic techniques for the teaching laboratory