

UNDERGRADUATE CATALOG 2016–17

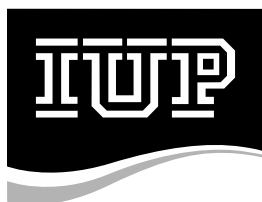
Biochemistry Program

College of Natural Sciences and Mathematics

www.iup.edu/biochemistry

This document is a direct extract from the full 2016–17 *Undergraduate Catalog*. As a result, the original page numbering will appear.

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Indiana University of Pennsylvania

Major:	52
Required Courses:	
BIOC 301	Foundations of Biochemistry 3cr
BIOC 302	Advanced Biochemistry 3cr
BIOC 311	Biochemistry Laboratory I 1cr
BIOC 312	Biochemistry Laboratory II 1cr
BIOC 401	Laboratory Methods in Biology and Biotechnology 3cr
BIOC 480	Biochemistry Seminar I (1) 1cr
BIOC 481	Special Topics in Biochemistry 3cr
BIOC 482	Independent Research in Biochemistry 2cr
BIOC 490	Biochemistry Seminar II (1) 1cr
BIOL 202	Principles of Cell and Molecular Biology 4cr
BIOL 250	Principles of Microbiology 4cr
BIOL 263	Genetics 3cr
CHEM 113	Advanced General Chemistry I 4cr
CHEM 114	Advanced General Chemistry II 4cr
CHEM 231	Organic Chemistry I 4cr
CHEM 232	Organic Chemistry II 4cr
CHEM 323	Analytical Methods 4cr
CHEM 341	Physical Chemistry I 4cr
Controlled Electives:	6-8
Two courses chosen from any 300- or 400-level BIOC/BIOL/CHEM courses or MATH 216 or COSC 110	
Free Electives:	16-18
Total Degree Requirements:	120
(1) 1cr each semester of senior year.	

Biochemistry Program

Website: www.iup.edu/biochemistry

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The BS degree program in biochemistry is a four-year degree curriculum offered as a cooperative program by the Biology and Chemistry departments. This program also offers the Biochemistry minor.

The curriculum leading to a BS degree with a major in biochemistry begins with foundation courses in biology, chemistry, mathematics, and physics in the first two years. Specialization in biochemistry commences in the third year with courses in Biochemistry, Genetics, Physical Chemistry, Special Topics in Biochemistry, and Biochemistry Seminar and an American Chemical Society certified degree.

A unique feature of this undergraduate program is that biochemistry research is a requirement. After consultation with faculty, the students will define a problem and devise an experimental plan through library research. Laboratory research will be done under the direct supervision of a faculty member. Finally, the student will report on the results of the research in both written and oral forms.

This program is intended for students whose interests lie in a most exciting field of modern science. Graduates can expect to be qualified to enter graduate programs in biochemistry, biology, chemistry, and molecular biology; professional schools in the health sciences; and positions in industrial and government research laboratories and in industrial production facilities.

Bachelor of Science—Biochemistry

Liberal Studies: As outlined in the Liberal Studies section with the following specifications: 44

Mathematics: MATH 125

Natural Science: PHYS 131-141 and 132-142

Liberal Studies Electives: 3cr, MATH 126, no courses with BIOC prefix

Minor—Biochemistry 17-20

Total credits will depend on the controlled electives used (9cr minimum required to 12cr for three 4cr electives).

Required Courses:	8
BIOC 301	Foundations of Biochemistry (1a) 3cr
BIOC 302	Advanced Biochemistry 3cr
BIOC 311	Biochemistry Laboratory I (1a) 1cr
BIOC 312	Biochemistry Laboratory II 1cr

Other Requirements: 9-12

At least three controlled electives from following: (1)

BIOC 480	Biochemistry Seminar I 1cr
BIOC 481	Special Topics in Biochemistry 1-3cr
BIOC 490	Biochemistry Seminar II 1cr
BIOL 250	Principles of Microbiology (1b, d) 4cr
BIOL 263	Genetics (1b) 3cr
BIOL 350	Cellular Physiology 3cr
BIOL 352	Comparative Animal Physiology (1d) 3cr
BIOL 364	Immunology (1d) 3cr
BIOL 401	Laboratory Methods in Biology and Biotechnology (1d) 3cr
BIOL 453	Plant Physiology (1d) 3cr
CHEM 232	Organic Chemistry II (1c) 4cr
CHEM 322	Instrumental Analysis (1c, d) 4cr
CHEM 323	Analytical Methods 4cr

- (1) Or other 200-level or higher biology or chemistry courses with permission of chairperson of offering department. A minimum of 9cr is required.
- BIOL 202 and CHEM 232 are prerequisites.
 - Required for biology major
 - Required for chemistry major
 - These courses have prerequisites not needed for the required courses.