SPECIALIZED CURRICULUM IN BIOCHEMISTRY

For the Degree Bachelor of Science in Biochemistry

The typical program of courses required to satisfy this degree totals 126-131 hours as outlined below including up to 12 hours of non-primary language (if not completed in high school); in no case will a program totaling less than 120 hours qualify for graduation. In addition, in order to graduate there is a minimum 2.0 cumulative academic grade point average and student must attain a 2.5 academic grade point average in the chemistry, biochemistry, biology, mathematics, physics and advanced electives in science/engineering courses specified in this curriculum. All proposals for course substitutions must be approved by the academic advisor. This curriculum is intended for those students who desire a rigorous education in chemistry, biochemistry, and biology, who have definite research-oriented goals, and whose career objectives include graduate school, MD/PhD programs, or industry.

E-mail: biocug@life.illinois.edu

Web address for department: http://mcb.illinois.edu/departments/biochemistry

All students must complete the General education (https://courses.illinois.edu) requirements including the campus general education language requirement.

Minimum hours required for graduation: 120 hours

Students earning the Biochemistry degree automatically complete the Chemistry minor. Students earning a degree in the Specialized Curriculum in Biochemistry may not earn a second degree in the Science and Letters Curriculum in Molecular and Cellular Biology.

Departmental distinction: A student seeking distinction must satisfy the following:

- Complete a minimum of 6 credit hours of undergraduate research (BIOC 290 and BIOC 492) with a minimum of 4 credit hours of BIOC 492.
- Earn at least a 3.25 grade-point average.
- Present a senior thesis to the department.

Select one of the following:

CHEM 202 Accelerated Chemistry I
& CHEM 20:and Accelerated Chemistry Lab I
& CHEM 20:and Accelerated Chemistry II
& CHEM 20:and Accelerated Chemistry Lab II (preferred sequence)

CHEM 102 General Chemistry I
& CHEM 103:and General Chemistry Lab I
& CHEM 104:and General Chemistry II
& CHEM 104:and General Chemistry Lab II (with advisor approval)

Organic chemistry, select from: 8-9

CHEM 236 Fundamental Organic Chem I
& CHEM 23:and Structure and Synthesis
& CHEM 43:and Fundamental Organic Chem II (preferred sequence)

CHEM 232 Elementary Organic Chemistry I
& CHEM 23:and Elementary Organic Chem Lab I
& CHEM 33:and Elementary Organic Chem II (with advisor approval)

Molecular and Cellular Biology

MCB 150 Molec & Cellular Basis of Life
MCB 250 Molecular Genetics
MCB 251 Exp Techniqs in Molecular Biol
MCB 252 Cells, Tissues & Development
MCB 253 Exp Techniqs in Cellular Biol
MCB 354 Biochem & Phys Basis of Life
or equivalent as approved by academic advisor

Physical chemistry, select one group of courses: 7-8

CHEM 440 Physical Chemistry Principles (Biological Perspective Section)

BIOC 446 Physical Biochemistry (preferred sequence)

or

CHEM 442 Physical Chemistry I

CHEM 444 Physical Chemistry II (with advisor approval)

Mathematics 11-12

MATH 220 Calculus
or MATH 221 Calculus I
MATH 231 Calculus II
MATH 241 Calculus III

Physics, select from: 3 10-12

PHYS 211 University Physics: Mechanics
& PHYS 212 University Physics: Elec & Mag
& PHYS 213 Univ Physics: Thermal Physics
& PHYS 214 Univ Physics: Quantum Physics (preferred sequence)

PHYS 101 College Physics: Mech & Heat
& PHYS 102 College Physics: E&M & Modern (or equivalent as approved by academic advisor (with advisor approval)

Biochemistry: 4 13

BIOC 455 Technqs Biochem & Biotech
BIOC 460 Biochemistry Senior Seminar
BIOC 406 Gene Expression & Regulation
BIOC 445 Current Topics in Biochemistry

Select 10 hours of Advanced Science/Technical Electives
(may include up to 7 hours of BIOC 492, Senior Thesis) from approved list. 5

Nontechnical Requirements: 6 variable

General education:

Foreign language - three semesters of college study (or three years of high school study) in a single foreign language to satisfy the campus foreign language requirement

Composition I writing requirement to satisfy the campus
Composition I requirement

Advanced Composition writing requirement (BIOC 460 is required)

Information listed in this catalog is current as of 07/2017
Humanities/Arts to satisfy the campus general education requirements

Social/Behavioral sciences to satisfy the campus general education requirements

Cultural Studies to satisfy the campus general education requirement

Electives (not including any credit in satisfaction of the above requirements)

| Transfer credit must be approved by an advisor in biochemistry in order to be used to satisfy degree requirements. |
| A more detailed description of the requirements is listed in the Biochemistry Curriculum Handbook, available in room 419A of Roger Adams Laboratory. |
| PHYS 213 is not required if CHEM 442/CHEM 444 sequence is taken. |
| Freshman orientation course is under development and will be required. See advisor for details. |
| An approved list of current courses will be updated annually in January/February for the coming year. Contact advisor. |
| The requirements for the Campus General Education categories of Natural Sciences and Technology and Quantitative Reasoning I are fulfilled through coursework in the curriculum. |