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 (BI OC 290 and BI OC 492) with a minimum of 4 credit hours of BI OC 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:

- 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:

- 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

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

Physics, select from:

- PHYS 211 University Physics: Mechanics
  & PHYS 212 University Physics: Elec & Mag
  & PHYS 213 University Physics: Thermal Physics
  & PHYS 214 University 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:

- 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.

Nontechnical Requirements:

- 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)
Specialized Curriculum in Biochemistry

Information listed in this catalog is current as of 09/2017

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)

1. Transfer credit must be approved by an advisor in biochemistry in order to be used to satisfy degree requirements.

2. A more detailed description of the requirements is listed in the Biochemistry Curriculum Handbook, available in room 419A of Roger Adams Laboratory.

3. PHYS 213 is not required if CHEM 442/CHEM 444 sequence is taken.

4. Freshman orientation course is under development and will be required. See advisor for details.

5. An approved list of current courses will be updated annually in January/February for the coming year. Contact advisor.

6. The requirements for the Campus General Education categories of Natural Sciences and Technology and Quantitative Reasoning I are fulfilled through coursework in the curriculum.