BIOCHEMISTRY, BS
for the degree of Bachelor of Science Major in Biochemistry (Specialized Curriculum)

department website: http://mcb.illinois.edu/departments/biochemistry (http://mcb.illinois.edu/departments/biochemistry/)
department faculty: Biochemistry Faculty (http://mcb.illinois.edu/faculty/biochemistry/)
overview of college admissions & requirements: Liberal Arts & Sciences (http://catalog.illinois.edu/schools/las/academic-units/)
college website: https://las.illinois.edu/
email: biocug@mcb.uiuc.edu

Undergraduate degree programs in Molecular & Cellular Biology
Biochemistry, BS (p. 1)

Molecular & Cellular Biology, BSLAS (http://catalog.illinois.edu/undergraduate/las/molecular-cellular-biology-bslas/)

for the degree of Bachelor of Science Major in Biochemistry (Specialized Curriculum)

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.

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.

General education: Students must complete the Campus General Education (https://courses.illinois.edu/gened/DEFAULT/DEFAULT/) requirements including the campus general education language requirement.
Minimum hours required for graduation: 120 hours.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>CHEM 202</td>
<td>Accelerated Chemistry I</td>
<td>8-10</td>
</tr>
</tbody>
</table>
& CHEM 203 | and Accelerated Chemistry Lab I              |       |
& CHEM 204 | and Accelerated Chemistry II                 |       |
& CHEM 205 | 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 105 | and General Chemistry Lab II (with advisor approval) |       |

Organic chemistry, select from:

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<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>CHEM 236</td>
<td>Fundamental Organic Chem I</td>
<td>9-10</td>
</tr>
</tbody>
</table>
& CHEM 237 | and Structure and Synthesis                  |       |
& CHEM 436 | and Fundamental Organic Chem II              |       |
(preferred sequence) |       |
CHEM 232 | Elementary Organic Chemistry I               |       |
& CHEM 233 | and Elementary Organic Chem Lab I            |       |
& CHEM 332 | and Elementary Organic Chem II (with advisor approval) |       |

Molecular and Cellular Biology

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<tr>
<th>Code</th>
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<tbody>
<tr>
<td>MCB 150</td>
<td>Molec &amp; Cellular Basis of Life</td>
</tr>
<tr>
<td>MCB 250</td>
<td>Molecular Genetics</td>
</tr>
<tr>
<td>MCB 251</td>
<td>Exp Techniqs in Molecular Biol</td>
</tr>
<tr>
<td>MCB 252</td>
<td>Cells, Tissues &amp; Development</td>
</tr>
<tr>
<td>MCB 253</td>
<td>Exp Techniqs in Cellular Biol</td>
</tr>
<tr>
<td>MCB 354</td>
<td>Biochem &amp; Phys Basis of Life</td>
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or equivalent as approved by academic advisor |

Physical chemistry, select one group of courses:

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<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>CHEM 440</td>
<td>Physical Chemistry Principles (Biological Perspective Section)</td>
</tr>
<tr>
<td>BIOC 446</td>
<td>Physical Biochemistry (preferred sequence)</td>
</tr>
</tbody>
</table>
or |
| CHEM 442 | Physical Chemistry I                         |
| CHEM 444 | Physical Chemistry II (with advisor approval) |

Mathematics & Statistics

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>STAT 212</td>
<td>Biostatistics</td>
</tr>
<tr>
<td>MATH 220</td>
<td>Calculus</td>
</tr>
</tbody>
</table>
or MATH 221 | Calculus I                                 |
| MATH 231 | Calculus II                                  |
| MATH 241 | Calculus III                                 |

Physics, select from:

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<tr>
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<th>Title</th>
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<tbody>
<tr>
<td>PHYS 211</td>
<td>University Physics: Mechanics</td>
</tr>
</tbody>
</table>
& PHYS 212 | and University Physics: Elec & Mag          |
& PHYS 213 | and Univ Physics: Thermal Physics            |
(preferred sequence) | |
or |

Information listed in this catalog is current as of 07/2021
PHYS 101 & PHYS 102  
College Physics: Mech & Heat  
and College Physics: E&M & Modern (or equivalent as approved by academic advisor (with advisor approval))

Biochemistry: 4  
BIOC 455  
Technqs Biochem & Biotech  
BIOC 460  
Biochemistry Senior Seminar  
BIOC 406  
Gene Expression & Regulation  
BIOP 401  
Introduction to Biophysics

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

Nontechinal 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)

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)  variable

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.