

## Curriculum in Biochemistry (BS Biochem)

This degree program is certified by the American Chemical Society and endorsed by the American Society for Biochemistry and Molecular Biology. It requires completion of specific biology, chemistry, mathematics, and physics courses as well as the general requirements set forth for the College of Liberal Arts and Sciences in the Undergraduate Catalog. **Students should note that not all courses are offered every term.**

### Required Courses

Courses joined by plus signs comprise sequences.

#### Biological Sciences

BioS 100 + 101 and BioS 220 13 semester hrs.

#### General and Analytical Chemistry

Chem 112 + 114 and Chem 222 14

or Chem 116 + 118 and Chem 222

#### Organic Chemistry

Chem 232 + 234 8

Chem 233 (*lab*) 1

#### Inorganic Chemistry

Chem 314 4

#### Physical Chemistry

Chem 342 + 344 and 343(*lab*) 8

or Chem 342 + 346 and 343 (*lab*) (or 9)

#### Biochemistry

Chem or BioS 452 + 454 and 455 (*lab*) 11

#### Advanced Courses in Biological Sciences

At least two courses at the 200-level or above. One of these must be from either the area of Cell and Molecular Biology or the area of Microbiology, chosen in consultation with the faculty advisor. 6

#### Collateral courses

Math 180 + 181 10

Physics 141 + 142 (*recommended*) 8

or Physics 105, 106 + 107, 108 (or 10)

#### Pattern of Study

Students typically take biology and general chemistry in the first year, organic chemistry in the second year, inorganic and physical chemistry in the third year, biochemistry in the fourth year and other advanced courses, supervised research, and electives in the fourth year. Taking biochemistry in the third year and physical chemistry in the fourth year is also common, but programs should be planned so that the prerequisites for physical chemistry (Chem 342) are completed by the mid-point of the third year, if possible. These prerequisites consist of Math 181, Chem 222 and one year of college physics. Note that Chem 455 is usually taught in the Spring term only. Transfer students should note that "breaking sequences" (taking one semester of a sequence at one school and the second semester at another) is not recommended.

(See reverse)

**Four Year Model Plan of Study for a Curriculum in Biochemistry**  
Fall 2003

|                                                    |                     | First Year                                         |                     | Second Year     |  | Third Year    |  | Fourth Year     |  |
|----------------------------------------------------|---------------------|----------------------------------------------------|---------------------|-----------------|--|---------------|--|-----------------|--|
|                                                    |                     | Fall Semester                                      |                     | Spring Semester |  | Fall Semester |  | Spring Semester |  |
| Engl 160 <sup>1</sup>                              | 3 hours             | Engl 161                                           | 3 hours             |                 |  |               |  |                 |  |
| Math 180 <sup>1</sup>                              | 5 hours             | Math 181 <sup>3</sup>                              | 5 hours             |                 |  |               |  |                 |  |
| Chem 112 or 116 <sup>2</sup>                       | 5 hours             | Chem 114 or 118 <sup>4</sup>                       | 5 hours             |                 |  |               |  |                 |  |
| Humanities, Social Sciences, or Cultural Diversity | 3 hours             | Humanities, Social Sciences, or Cultural Diversity | 3 hours             |                 |  |               |  |                 |  |
| <b>Total</b>                                       | <b>16 hours</b>     | <b>Total</b>                                       | <b>16 hours</b>     |                 |  |               |  |                 |  |
|                                                    |                     | Second Year                                        |                     | Third Year      |  | Fourth Year   |  |                 |  |
|                                                    |                     | Fall Semester                                      |                     | Spring Semester |  |               |  |                 |  |
| Chem 232                                           | 4 hours             | Chem 234                                           | 4 hours             |                 |  |               |  |                 |  |
| Chem 233                                           | 1 hour              | Bios 100 or 101 <sup>3</sup>                       | 5 hours             |                 |  |               |  |                 |  |
| Bios 100 or 101 <sup>3</sup>                       | 5 hours             | Foreign Language                                   | 4 hours             |                 |  |               |  |                 |  |
| Foreign Language                                   | 4 hours             | Physics 141 (or 105 and 106) <sup>3</sup>          | 4 (5) hours         |                 |  |               |  |                 |  |
| Humanities, Social Sciences, or Cultural Diversity | 3 hours             |                                                    |                     |                 |  |               |  |                 |  |
| <b>Total</b>                                       | <b>17 hours</b>     | <b>Total</b>                                       | <b>17(18) hours</b> |                 |  |               |  |                 |  |
|                                                    |                     | Fall Semester                                      |                     | Spring Semester |  |               |  |                 |  |
| Bios 220                                           | 4 hours             | Chem 342                                           | 3 hours             |                 |  |               |  |                 |  |
| Chem 222                                           | 4 hours             | Chem 314                                           | 4 hours             |                 |  |               |  |                 |  |
| Foreign Language                                   | 4 hours             | Bios elective <sup>5</sup>                         | 3 hours             |                 |  |               |  |                 |  |
| Phys 142 (or 107 and 108) <sup>3</sup>             | 4(5) hours          | Humanities, Social Sciences, or Cultural Diversity | 3-4 hours           |                 |  |               |  |                 |  |
| <b>Total</b>                                       | <b>16(17) hours</b> | <b>Total</b>                                       | <b>17-18 hours</b>  |                 |  |               |  |                 |  |
|                                                    |                     | Fall Semester                                      |                     | Spring Semester |  |               |  |                 |  |
| Chem 452                                           | 4 hours             | Chem 454 <sup>4</sup>                              | 4 hours             |                 |  |               |  |                 |  |
| Chem 343                                           | 3 hours             | Chem 455                                           | 3 hours             |                 |  |               |  |                 |  |
| Chem 344                                           | 2 hours             | Humanities, Social Sciences, or Cultural Diversity | 3 hours             |                 |  |               |  |                 |  |
| Bios elective <sup>5</sup>                         | 3 hours             | Humanities, Social Sciences, or Cultural Diversity | 3 hours             |                 |  |               |  |                 |  |
| Humanities, Social Sciences, or Cultural Diversity | 3-4 hours           |                                                    |                     |                 |  |               |  |                 |  |
| <b>Total</b>                                       | <b>15-16 hours</b>  | <b>Total</b>                                       | <b>13 hours</b>     |                 |  |               |  |                 |  |

1. Math 180 satisfies the LAS Quantitative Reasoning requirement and 5 hours of the LAS Natural Sciences requirement.
2. Chem 116 is offered fall semester only.
3. The remaining 8 hours of the LAS Natural Sciences requirement is satisfied by some combination of Math 181, Phys 141, 142, and Bios 100, 101.
4. Chem 118 and 454 are offered spring semester only.
5. Two advanced-level courses in Biological Sciences, chosen in consultation with a faculty advisor. One must be from the area of cell and molecular biology or the area of microbiology.

Note: Many students prefer to take 452, 454, and 455 in their 3<sup>rd</sup> year.  
 Note: Students beginning at UIC Fall 2002 must earn at least 40 hours at the 200, 300, or 400 level at a 4-year college or university. These hours may include hours in the major.