Biochemistry is an interdisciplinary major that is administered jointly by the Biology and Chemistry Departments. Students interested in the biochemistry major may consult Seth Robertson (355E Higgins), Prof. Anthony Annunziato (401A Higgins), Prof. Kathy Dunn (412 Higgins).

### Required Courses

#### BIOLOGY

- **BIO 2000** Molecules & Cells *(fall/spring)*
- **BIO 2010** Ecology & Evolution *(fall/spring)* OR **BIO 3030** Introduction to Physiology *(fall only)*
- **BIO 2040** Investigations in Molecular Cell Biology *(fall/spring)*

#### CHEMISTRY COURSES

- **CHEM 1109/1111** General Chemistry I with Lab (or **CHEM 1117/1119** *(fall)*)
- **CHEM 2231/2233** Organic Chemistry I with Lab (or **CHEM 2241** *(fall)*)
- **CHEM 3351/3353** Analytical Chemistry/Lab *(fall)*

#### CHEMISTRY COURSES (for Biochemistry Majors with AP Biology)

- **CHEM 1110/1112** General Chemistry II with Lab (or **CHEM 1118/1120** *(spring)*)
- **CHEM 2232/2234** Organic Chemistry II with Lab (or **CHEM 2242** *(spring)*)
- **CHEM 4473** Physical Chem/Biochem Majors *(fall/spring)*

#### BIOCHEMISTRY COURSES

**Option 1 (Biology) – may be taken in any order:**
- **BIO 4350** Biological Chemistry *(spring only)*

**Option 2 (Chemistry) – to be taken in sequence:**
- **CHEM 4461** Biochemistry 1 *(fall)*

#### MATHEMATICS COURSES

- Calculus II: **MATH 1110** or **MATH 1105** *(If credit through AP Calc BC, take another advanced math course)*

#### PHYSICS COURSES

- **PHYS 2100** Intro to Physics I with Lab *(calc-based)*
- **PHYS 2101** Intro to Physics II with Lab *(calc-based)*
### ADVANCED ELECTIVES (2 courses, minimum of 5 credits total)

Students planning to go to Grad School are urged to become involved in Undergraduate Research or take an Advanced Laboratory course.

#### Fall 2021

**Lecture/Seminar Options:**
- [ ] Virology (BIOL 4090)
- [ ] Introduction to Bioinformatics (BIOL 4200)
- [ ] Developmental Biology (BIOL 4320)
- [ ] Principles of Immunology (BIOL 4570)
- [ ] Topics in Developmental Biology (BIOL 5040) (2 credits)
- [ ] Exploring the Eukaryotic Chromosome (BIOL 5190) – 2 cr
- [ ] Environmental Disruptors of Development (BIOL 5130)
- [ ] Cancer as a Metabolic Disease (BIOL 5420)
- [ ] Peptide Therapeutics (CHEM 5512)
- [ ] Metallobiochemistry (CHEM 5527)
- [ ] NMR Spectroscopy (CHEM 5539)

**Advanced Labs Options:**
- [ ] Research in Evolutionary Genomics (BIOL 4802)
- [ ] Research in Molecular Cell Biology (BIOL 4220)
- [ ] Research in Molecular Biology Lab (BIOL 4830)
- [ ] Investigations in Cellular Re-Programming (BIOL 4890)
- [ ] Two semesters of Undergraduate Research

#### Spring 2022

**Lecture/Seminar Options:**
- [ ] Medical Biochemistry and Metabolism (BIOL 4290)
- [ ] Cancer Biology (BIOL 4510)
- [ ] Molecular Biology of Disease (BIOL 4460)
- [ ] Recombinant DNA Technology (BIOL 5060)
- [ ] Microbial Community Ecology (BIOL 5071) (2 credits)
- [ ] Microbiomes/Human Disease (BIOL5100) (2 credits)
- [ ] Vaccine Development & Public Health (BIOL 5150)
- [ ] Immunity and Infectious Disease (BIOL5230)
- [ ] Cancer as a Metabolic Disease (BIOL 5420)
- [ ] Genomics & Personalized Medicine (BIOL 5430)
- [ ] Synthetic Biology (BIOL 5440)
- [ ] Magnetic Resonance in Biology (CHEM 5540)
- [ ] Chemical Biology (CHEM 5567)

**Advanced Labs Options:**
- [ ] Research in Molecular Biology Lab (BIOL 4830)
- [ ] Research in Molecular Genetics Lab (BIOL 4870)
- [ ] Two semesters of Undergraduate Research