

# BIOCHEMISTRY/ MOLECULAR BIOLOGY

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Biochemistry/Molecular Biology (BCMB) is an interdisciplinary major aiming at an in-depth understanding of living systems at the molecular level. Students in the BCMB major learn about cell structure, its characteristics from a biological and biochemical perspective, and its intricate and complex functions through which basic life processes are governed. To this end, the curricular structure for this major includes courses from various disciplines in the Natural Sciences, including Biology, Chemistry, Mathematics and Physics. In addition to the standard coursework, the BCMB curriculum emphasizes the importance of a research experience through which the students are exposed to the state-of-the-art techniques used by researchers in this field. The major also prepares undergraduate students interested in pursuing interdisciplinary graduate programs, such as genetic engineering, genomics, proteomics and bioinformatics.

## MAJOR

The BCMB major consists of these courses:

- MATH 140 *Calculus II*
- PHYS 210 *General Physics I* or PHYS 230 *General Physics I (Calculus-based)*
- CHEM 110 *General Chemistry I* and CHEM 120 *General Chemistry II*
- CHEM 240 *Organic Chemistry I* and CHEM 250 *Organic Chemistry II*
- BIOL 150 *Cell Biology*
- BIOL 160 *Organismal Biology*
- BIOL 250 *Genetics*
- CHEM 320 *Physical Chemistry: Thermodynamics and Chemical Kinetics*

- CHEM 330 *Biochemistry*
- BIOL 450 *Advanced Cell Biology* or BIOL 470 *Molecular Genetics*
- One upper level elective course from the following list
  - BIOL 310 *Developmental Biology*
  - BIOL 320 *Animal Physiology*
  - BIOL 340 *Microbiology*
  - BIOL 430 *Immunology*
  - BIOL 450 *Advanced Cell Biology* (taken in addition to *Molecular Genetics*)
  - BIOL 460 *Evolution*
  - BIOL 470 *Molecular Genetics* (taken in addition to *Advanced Cell Biology*)
  - BIOL 370 *Plant Physiology*
  - CHEM 430 *Integrated Biochemical Topics*
- Research (BIOL 499, CHEM 450, or Independent Study)
  - Subject to prior approval by the BMB core faculty.
  - One semester course credit for work done either:
    - a) during one summer (at least 8 weeks full-time work) at Hendrix or an off-campus summer research experience such as work under an REU program. All off-campus research projects must be pre-approved by the Program Chair.
    - b) two semesters work at Hendrix.

### Senior Capstone Experience

The Senior Capstone Experience will consist of a choice of capstone experiences currently used by the Biology or Chemistry Department. Any rising seniors who select to change to this major will be current Biology or Chemistry majors who should be well prepared to complete the comprehensive examination and other elements of the capstone experience in their current major.

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### Biochemistry/Molecular Biology Courses

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All the courses required for the Biochemistry/Molecular Biology major are described under the respective academic departments.