BIOCHEMISTRY MAJOR

The study of molecular and atomic properties and interactions that encompass Chemistry and Biochemistry are central to many scientific disciplines including biology, geology, astronomy, environmental science, materials science and numerous others. Chemistry and Biochemistry majors continue to graduate or professional school, and obtain employment as educators and technical scientists. Courses offered by this department may be found under the following acronyms: BCHM, CHEM

Admission to the Major

Chemistry and Biochemistry are part of a Limited Enrollment program (LEP) within the College of Computer, Mathematical, and Natural Sciences (CMNS). Current UMCP students who wish to declare in CHEM or BCHM must complete a series of gateway courses (CHEM146/CHEM177 or CHEM131/CHEM132, CHEM237 or CHEM231/CHEM232, and MATH140 and MATH141) prior to applying to the program. Information is available at: http://www.lep.umd.edu.

Placement in Courses

The Department of Chemistry and Biochemistry rigorously enforce all of its prerequisites. Enrollment in CHEM131/CHEM132 or CHEM146/CHEM177 requires placement in calculus (MATH120 or MATH135 or MATH140).

Requirements

All required chemistry, biochemistry, and upper-level biological sciences courses must be passed with a minimum grade of "C-". Required supporting courses, including BSCI170 & BSCI171, must be passed with a 2.0 grade point average.

Course Title Credits
UNIV100 The Student in the University 1

Lower-Level CHEM Courses
CHEM146 Principles of General Chemistry 5
& CHEM177 and Introduction to Laboratory Practices and Research in the Chemical Sciences
CHEM237 Principles of Organic Chemistry I 4
CHEM247 Principles of Organic Chemistry II 4
CHEM276 General Chemistry and Energetics - Majors 5
& CHEM277 and Fundamentals of Analytical and Bioanalytical Chemistry Laboratory

Supporting Courses
BSCI170 Principles of Molecular & Cellular Biology 4
& BSCI171 and Principles of Molecular & Cellular Biology Laboratory
PHYS161 General Physics: Mechanics and Particle 7
Dynamics
& PHYS260 and General Physics: Vibration, Waves, Heat, Electricity and Magnetism
& PHYS261 and General Physics: Vibrations, Waves, Heat, Electricity and Magnetism (Laboratory)
MATH140 Calculus I 4
MATH141 Calculus II 4

Required Upper Level CHEM/BCHM Courses
CHEM395 Professional Issues in Chemistry and Biochemistry 1

CHEM425 Instrumental Methods of Analysis 4
CHEM481 Physical Chemistry I 5
& CHEM483 and Physical Chemistry Laboratory I
BCHM461 Biochemistry I 3
BCHM462 Biochemistry II 3
BCHM464 Biochemistry Laboratory 3
BCHM465 Biochemistry III 3
BCHM485 Physical Biochemistry 3

Approved biological science courses 6

Total Credits 69

1 Note: All majors and potential majors are encouraged to take MATH241 prior to beginning Physical Chemistry.

Four Year Plan

Click here (https://cmns.umd.edu/undergraduate/advising-academic-planning/academic-planning/four-year-plans/four-year-plans-gened) for roadmaps for four-year plans in the College of Computer, Mathematical, and Natural Sciences.

Additional information on developing a four-year academic plan can be found on the following pages:

• 4yearplans.umd.edu
• the Student Academic Success-Degree Completion Policy (https://academiccatalog.umd.edu/undergraduate/registration-academic-requirements-regulations/academic-advising) section of this catalog

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