

# BIOCHEM CELL/MOLECULAR BIO (BCMB)

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## BCMB 0-- BCMB LOWER DIVISION. (0-10 Credits)

Lower Level Coursework in Biochem Cell/Molecular Bio

**Level:** Professional Health Care, Undergraduate

**Prerequisite(s):** None

**Corequisite(s):** None

**Restrictions:** None

**Primary grade mode:** Transfer

**Schedule type(s):** Lecture, Web Instructed

**Area(s) of Inquiry:** None

## BCMB 1-- BCMB UPPER DIVISION. (0-10 Credits)

Upper Level Coursework in Biochem Cell/Molecular Bio

**Level:** Professional Health Care, Undergraduate

**Prerequisite(s):** None

**Corequisite(s):** None

**Restrictions:** None

**Primary grade mode:** Transfer

**Schedule type(s):** Lecture, Web Instructed

**Area(s) of Inquiry:** None

## BCMB 005. INTRODUCTION TO MOLECULAR SCIENCES. (1 Credit)

This is a one-hour course for students interested in studying molecular sciences to inaugurate them into the community of scientists at Drake. It will include readings about the role of science in society, development of demonstrations that correspond with general chemistry, seminar presentations, and introduction to research projects at Drake.

**Level:** Non Degree Coursework, Professional Health Care, Undergraduate

**Prerequisite(s):** None

**Corequisite(s):** None

**Restrictions:** None

**Primary grade mode:** Standard Letter

**Schedule type(s):** Independent Study, Lecture, Web Instructed

**Area(s) of Inquiry:** None

## BCMB 099. BCMB PROFESSIONAL DEVELOPMENT. (1 Credit)

This course is designed to assist students in science and science-related career paths as they look at potential career alternatives and then plan their curriculum, research, and experiences. It begins with career exploration then introduces some interdisciplinary basic skills (communication, business, technology) and finally explores job performance issues. It will typically involve sophomore students who are midway in their college careers. This will enable them to have a degree of maturity but still have time to make adjustments in their curricular plans.

**Level:** Non Degree Coursework, Professional Health Care, Undergraduate

**Prerequisite(s):** None

**Corequisite(s):** None

**Restrictions:**

Students with a classification of Freshman may **not** enroll.

**Primary grade mode:** Standard Letter

**Schedule type(s):** Independent Study, Lecture, Web Instructed

**Area(s) of Inquiry:** None

## BCMB 130. BIOCHEMISTRY. (3 Credits)

**Level:** Non Degree Coursework, Professional Health Care, Undergraduate

**Prerequisite(s):** None

**Corequisite(s):** None

**Restrictions:** None

**Primary grade mode:** Standard Letter

**Schedule type(s):** Independent Study, Lecture, Web Instructed

**Area(s) of Inquiry:** None

## BCMB 131. BIOCHEMISTRY LAB. (1 Credit)

**Level:** Non Degree Coursework, Professional Health Care, Undergraduate

**Prerequisite(s):** None

**Corequisite(s):** None

**Restrictions:** None

**Primary grade mode:** Standard Letter

**Schedule type(s):** Independent Study, Lecture, Web Instructed

**Area(s) of Inquiry:** None

## BCMB 132. ADVANCED BIOCHEMISTRY. (3 Credits)

**Level:** Non Degree Coursework, Professional Health Care, Undergraduate

**Prerequisite(s):** None

**Corequisite(s):** None

**Restrictions:** None

**Primary grade mode:** Standard Letter

**Schedule type(s):** Independent Study, Lecture, Web Instructed

**Area(s) of Inquiry:** None

## BCMB 133. ADVANCED BIOCHEMISTRY LAB. (1 Credit)

**Level:** Non Degree Coursework, Professional Health Care, Undergraduate

**Prerequisite(s):** None

**Corequisite(s):** None

**Restrictions:** None

**Primary grade mode:** Standard Letter

**Schedule type(s):** Independent Study, Lecture, Web Instructed

**Area(s) of Inquiry:** None

## BCMB 134. MOLECULAR BIOLOGY. (3 Credits)

**Level:** Non Degree Coursework, Professional Health Care, Undergraduate

**Prerequisite(s):** None

**Corequisite(s):** None

**Restrictions:** None

**Primary grade mode:** Standard Letter

**Schedule type(s):** Independent Study, Lecture, Web Instructed

**Area(s) of Inquiry:** None

## BCMB 135. MOLECULAR BIOLOGY LAB. (1 Credit)

**Level:** Non Degree Coursework, Professional Health Care, Undergraduate

**Prerequisite(s):** None

**Corequisite(s):** None

**Restrictions:** None

**Primary grade mode:** Standard Letter

**Schedule type(s):** Independent Study, Lecture, Web Instructed

**Area(s) of Inquiry:** None

## BCMB 136. STRUCTURAL BIOLOGY. (3 Credits)

**Level:** Graduate, Non Degree Coursework, Professional Health Care, Undergraduate

**Prerequisite(s):** None

**Corequisite(s):** None

**Restrictions:** None

**Primary grade mode:** Standard Letter

**Schedule type(s):** Independent Study, Lecture, Web Instructed

**Area(s) of Inquiry:** None

**BCMB 137. ADVANCED MOLECULAR LS LAB. (3 Credits)**

**Level:** Non Degree Coursework, Professional Health Care, Undergraduate

**Prerequisite(s):** None

**Corequisite(s):** None

**Restrictions:** None

**Primary grade mode:** Standard Letter

**Schedule type(s):** Independent Study, Lab, Web Instructed

**Area(s) of Inquiry:** None

**BCMB 138. RESEARCH MENTORSHIP. (3 Credits)**

Continuation of research project from Advanced Molecular Life Sciences Laboratory (Chem 137, BCMB 137, Bio 195) with teaching and leadership assignments. These select students assist in class lectures, laboratory training of novice researchers and in writing and presenting research results at professional meetings. Prereq: Advanced Molecular Life Sciences Laboratory (Chem 137, BCMB 137, Bio 195) and invitation of BCMB faculty.

**Level:** Non Degree Coursework, Professional Health Care, Undergraduate

**Prerequisite(s):** CHEM 137 or BCMB 137 or BIO 195

**Corequisite(s):** None

**Restrictions:** None

**Primary grade mode:** Standard Letter

**Schedule type(s):** Independent Study, Lab, Web Instructed

**Area(s) of Inquiry:** None

**BCMB 161. BIOPHYSICAL CHEMISTRY. (4 Credits)**

The course will explore how living systems create order in a disorderly world, drive equilibria in directions dictated by immediate needs of the organism, make reactions occur so efficiently, specifically and effectively. They will explore how we observe chemical and physical properties of life's molecules (instrumental principles). They will discuss all these topics in the context of some examples that include photobiology, transport, macromolecular folding. Intended for students majoring in biochemistry, cell and molecular biology or pharmaceutical sciences. Prerequisites: at least one semester of calculus, 2 semesters of physics or consent of instructor.

**Level:** Non Degree Coursework, Professional Health Care, Undergraduate

**Prerequisite(s):** MATH 050 or MATH 070 or MATH 100 and (PHY 011) and (PHY 012) or (PHY 005) and (PHY 001)

**Corequisite(s):** None

**Restrictions:** None

**Primary grade mode:** Standard Letter

**Schedule type(s):** Independent Study, Lecture, Web Instructed

**Area(s) of Inquiry:** None

**BCMB 195. BCMB SENIOR CAPSTONE SEMINAR. (1 Credit)**

Students in this class will read and discuss recent molecular life science articles. They will learn to read, interpret and critique research literature and integrate it with ethical and societal issues they raise. As students read the professional manuscripts, they will actively reflect upon the status of their learning over the course of their major curriculum.

This self-assessment will identify whether the content and skills gained through the program curriculum, provided them with sufficient background to function as practicing scientists. This reflection will be incorporated into and complete their BCMB portfolio.

**Level:** Non Degree Coursework, Professional Health Care, Undergraduate

**Prerequisite(s):** CHEM 130 (may be taken concurrently) or BIO 126 (may be taken concurrently) or BIO 131

**Corequisite(s):** None

**Restrictions:** None

**Primary grade mode:** Standard Letter with IP

**Schedule type(s):** Independent Study, Lecture, Web Instructed

**Area(s) of Inquiry:** None

**BCMB 198. BCMB INTERNSHIP. (1-12 Credits)**

Full time off-site research experience. This typically occurs in the fall of the senior year and extends one semester. Students who are interested and qualified may choose this course to gain additional practical and technical experience in academic and industrial settings. Working with a faculty advisor and practicing professionals the student will be placed in positions appropriate to their career goals. After the completion of the course, students return to Drake for completion of the graduation requirements. Prereq.: Junior standing and approval of BCMB advisor.

**Level:** Non Degree Coursework, Professional Health Care, Undergraduate

**Prerequisite(s):** None

**Corequisite(s):** None

**Restrictions:**

Students with a classification of Freshman or Sophomore may **not** enroll.

**Primary grade mode:** Standard Letter

**Schedule type(s):** Independent Study, Web Instructed

**Area(s) of Inquiry:** None

**BCMB 199. BCMB RESEARCH. (1-3 Credits)**

Participation in and contribution to research programs in collaboration with individual faculty members. The research is the basis for a formal written report. Prereq. Consent of instructor and BCMB program director. For information on Biochemistry courses see the Chemistry section. For more information on Molecular Biology courses, see the Biology section.

**Level:** Non Degree Coursework, Professional Health Care, Undergraduate

**Prerequisite(s):** None

**Corequisite(s):** None

**Restrictions:** None

**Primary grade mode:** Standard Letter with IP

**Schedule type(s):** Independent Study, Web Instructed

**Area(s) of Inquiry:** None