Molecular Environmental Biology Major Snapshot

Department of Environmental Science, Policy, and Management

The Molecular Environmental Biology (MEB) major is designed to expose students to the organization and function of biological organisms. Molecular approaches are expected to play an increasing role in environmental problem-solving in the near future, and their success will depend upon a sound understanding of biological principles from molecular through ecological levels. The program trains students in the organization and function of biological organisms and their integration into the environment.

The academic advisor is available to answer questions about this major in the Rausser College of Natural Resources Office of Instruction & Student Affairs in 260 Mulford Hall. Visit the MEB major website for more detailed information: https://nature.berkeley.edu/advising/majors/molecular-environmental-biology

Research Opportunities • College Honors Program • Environmental & Other Careers

Students with a GPA of 3.6 or higher may participate in the Rausser College Honors Program (H196) while completing their senior thesis. For more information, visit http://nature.berkeley.edu/advising/honors-program.

In addition to the Berkeley’s Undergraduate Research Apprenticeship Program (URAP), Rausser College students can also apply for faculty research projects through the Rausser College Sponsored Projects for Undergraduate Research (SPUR). Visit http://nature.berkeley.edu/undergraduate-research/spur for details.

Students may apply URAP, SPUR, Honors Program, or Supervised Independent Study Research (199 units in select departments) toward their MEB degree. Additional information on the next page.

Graduates are well-prepared for graduate education in a biological area, human or veterinary medicine, and other health professional schools; or for careers related to biology and the environment such as scientific research in government, industry, or academia, biological assessment for various governmental agencies, work in environmental consulting firms, and environmental or science education.

Getting a Degree

To earn a Bachelor of Science from U.C. Berkeley in Molecular Environmental Biology, students must fulfill unit and GPA requirements, university and campus requirements, college requirements, and major requirements. Please see reverse side for more details about the major requirements or speak to a major advisor.

University, Campus, College Requirements

- Entry Level Writing
- American History
- American Institutions
- American Cultures (may overlap with major requirements)
- Two courses in Reading & Composition [8 units]: R&C A and R&C B (must be taken for a letter grade)

Unit and GPA Requirements

- 120 Total Units
- 36 Upper Division Units
- 15 Upper Division Units must be completed in Rausser College (ENVECON, ENERES, ESPM, NUSCTX, PLANTBI)

In order to graduate, students must have at least a 2.0 cumulative GPA, and a 2.0 GPA in their MEB upper division major requirements. Courses taken for the major (both lower and upper division) must be taken for a letter grade and must be passed with a grade of C- or better.
# Molecular Environmental Biology Major Requirements

All courses for the major must be taken for a letter grade.

## College Requirement:

Reading & Composition (2 courses): must be completed by the end of 4th semester

Two courses in Reading & Composition:
- □ R&C A [4 units]
- □ R&C B [4 units]

## MEB Lower Division Requirements:

### ESPM Core (2 courses): may not overlap with breadth

- □ ESPM Environmental Science Core [3-4 units] ESPM 2, 6, C10 (L&S C30V), 15, or C46
- □ ESPM Social Science Core [4 units] ESPM 5, C11 (L&S C30U), C22AC, 50AC, or 60

### Breadth (2 courses): may not overlap with ESPM core or other major requirements

- □ One course [3-4 units] in Arts & Literature, Historical Studies, or Philosophy & Values
- □ One course [3-4 units] in Social & Behavioral Sciences or International Studies

### Math: 2 courses

- □ Math A: one course in Calculus I [3-4 units] Math 16A, 1A, or 10A
- □ Math B: a second course in calculus OR a course in statistics [3-4 units] Math 16B, 1B, 10B, Stat 2, C8, 20, 131A, PH 141, or 142 (or W142)

**Note:** Statistics is required for many pre-health and environmental research programs

### Chemistry: 3 semesters

- □ General Chemistry [5 units] □ Chem 1A and 1AL
- □ Organic Chemistry I [5 units] □ Chem 3A and 3AL
- □ Organic Chemistry II [5 units] □ Chem 3B and 3BL

### Biology: 2 semesters

- □ General Biology A [5 units] □ Bio 1A and 1AL
- □ General Biology B [4 units] □ Bio 1B includes lab

### Physics: 1 semester

- □ Introductory Physics [4 units] □ Physics 8A includes lab

**Note:** while not required for the MEB major, Physics 8B is required for many pre-health programs

## MEB Upper Division Requirements: [https://tinyurl.com/MEB-upperdiv](https://tinyurl.com/MEB-upperdiv)

With the exception of the lab courses, each course can be used to satisfy only one requirement. Core courses cannot overlap with the Area of Concentration requirement.

- □ Area A core: Biochem, Genetics, Molecular, Cell, and Developmental Biology [6-8 units] Complete 2 courses from the Area A course list (link above)
- □ Area B core: Organismal Biology, Physiology, and Ecology [5-10 units] Complete 2 courses from the Area B course list (link above)

Choose courses from your chosen concentration list (link above)

- □ Upper Division Laboratory courses Complete 2 upper division lab courses in ESPM, PLANTBI, NUSCTX, INTEGBI, or MCELLBI - at least three hours of laboratory or field work per week per course (may overlap with Area A, Area B, or Area of Concentration courses). **Research may be applied to one lab.

See list of additional approved lab courses: (link above)

* Up to four research units may be applied to any Area of Concentration (e.g. 199 units from ESPM, PLANTBI, NUSCTX, INTEGBI, MCELLBI; H196 from ESPM, PLANTBI, or NUSCTX; or UGIS 192C). Please consult with your advisor for units outside of these departments.

** 3-4 independent study units may be used to fulfill one Lab Requirement: a 199 course in ESPM, PLANTBI, NUSCTX, INTEGBI, or MCELLBI; H196 from ESPM, PLANTBI, or NUSCTX; or UGIS 192C.

The Moorea Program - ESPM C107/IB 158LF “Biology & Geomorphology of Tropical Islands” (13 units) will count as one Area B course, 4 units towards any area of concentration, and one lab course.

Many study abroad programs will count in these areas—for specific program info, talk to the major advisor.