

Lists of Required and Elective Courses in Concentrations in Biological Sciences

General Biology (30 units)

Required Courses (16 units)

- _____ **Bio 121** (3) Molecular Cell Biology (Bio 1 and 2)
- _____ **Bio 139** (4) General Microbiology (Bio 10 or [1 and 2]; Chem 20 or 24)
- _____ **Bio 160** (3) General Ecology (Bio 10 or [1 and 2]; Stat 1)
- _____ **Bio 188** (3) Evolution (Bio 184 or instructor's permission)
- _____ **Chem 161** (3) General Biochemistry (Chem 20 or 124; 1 yr bio recommended)

Elective Courses (14 units)

- _____ **3 units** from **Structure and Function** Electives
- _____ **11 units upper division Bio** course work,
chosen with help of advisor

Cell and Molecular Biology (35 units)

Required Courses (25 units)

- _____ **Bio 121** (3) Molecular Cell Biology (Bio 1 and 2)
- _____ **Bio 180** (4) Advanced Molecular Biology (Bio 121 and 184)
- _____ **Bio 187** (4) Advanced Cell Biology (Bio 121 and 184)
- _____ **Bio 188** (3) Evolution (Bio 184 or instructor's permission)
- _____ **Chem 20/20L** (3/1) for organic chem and lab
- _____ **Chem 31** (4) Quantitative Analysis (Chem 1B)
- _____ **Chem 161** (3) General Biochem (Chem 20 or 124; 1 yr bio recommended)
- _____ **Chem 162** (3) General Biochemistry Lab (Chem 31; chem 161 or 160A taken before
or concurrently; Eng 20 or equiv. 2nd sem. Composition course)

Elective Courses (10 units)

- _____ One of **the following courses**
 - _____ **Bio 126** (3) Comparative Vertebrate Anatomy (Bio 1 and 2)
 - _____ **Bio 127** (4) Developmental Biology (E)
 - _____ **Bio 128** (4) Plant Anatomy and Physiology (Bio 1 and 2)
 - _____ **Bio 131** (4) Systemic Physiology (Bio 1, 2, 10, 20 or 22; Chem 1B or 6B)
- _____ **3 units** from **Ecology, Evolution, Biodiversity** Electives
- _____ **Other units upper division Bio** electives,
to total 10 units, chosen with help of advisor

Biomedical Sciences (40 units)

Required Courses (27 units)

- _____ **Bio 22** (4) Introductory Human Anatomy
- _____ **Bio 121** (3) Molecular Cell Biology
- _____ **Bio 131** (4) Systemic Physiology
- _____ **Bio 139** (4) General Microbiology
- _____ **Chem 24, 124, 25** (3/3/3) Organic Chemistry
- _____ **Chem 161** (3) General Biochemistry

Elective Courses (13 units)

- _____ **3 units** from **Structure and Function** Electives
- _____ **3 units** from **Ecol, Evol, Biodiv** Electives
- _____ **7 units upper division Bio** course work,
chosen with help of advisor

Clinical Laboratory Sciences (35 units)

Required Courses (35 units)

- _____ **Bio 121** (3) Molecular Cell Biology
- _____ **Bio 124** (3) Clinical Hematology
- _____ **Bio 131** (4) Systemic Physiology
- _____ **Bio 139** (4) General Microbiology
- _____ **Bio 144** (4) Pathogenic Bacteriology
- _____ **Bio 149A** (3) Immunology
- _____ **Bio 149B** (1) Immunology and Serology Lab
- _____ **BIO 152** (3) Human Parasitology
- _____ **Chem 31** (4) Quantitative Analysis
- _____ **Chem 161** (3) General Biochemistry
- _____ **Chem 162** (3) General Biochemistry Lab

Ecology, Evolution, and Conservation (30 units)

Required Courses (13 units)

- _____ **Bio 160** (3) General Ecology
- _____ **Bio 167** (3) Quantitative Methods in Biology
- _____ **Bio 178** (3) Molecular Ecology
- _____ **Bio 188** (3) Evolution
- _____ **Bio 186B** (1) Ecological and Environmental Issues Seminar

Elective Courses (17 units)

- _____ **3 units** from **Structure and Function** Electives
- _____ **9 units** from **Ecol, Evol, Biodiv Electives**
 - _____ including at least 3 units from part A
 - _____ and at least 3 units from part B
- _____ **Additional upper division** elective courses, chosen
- _____ with advisor to **total 17** elective units

Consult advisor to see recommended electives for jobs with government agencies in wildlife biology, ecology, botany, fish biology, etc.

Microbiology (35 units)

Required Courses (28 units)

- _____ **Bio 121** (3) Molecular Cell Biology
- _____ **Bio 139** (4) General Microbiology
- _____ **Bio 143** (3) General Virology
- _____ **Bio 145** (3) Diversity of Microorganisms
- _____ **Bio 180** (4) Advanced Molecular Biology
- _____ **Chem 20/20L** (3/1) Organic Chemistry and Lab
- _____ **Chem 31** (4) Quantitative Analysis
- _____ **Chem 161** (3) General Biochemistry
- _____ **Chem 162** (3) General Biochemistry Lab

Elective Courses (7 units)

- _____ UD courses chosen from **Cell and Molec Biol Electives** OR
- _____ **CLS and Infectious Diseases Electives** (but not **Bio 124** or **125**),
- _____ chosen in consultation with advisor

Forensic Biology (38 units)

Required Courses (32 units)

- _____ **Bio 121** (3) Molecular Cell Biology
- _____ **Bio 150** (3) Forensic Biology
- _____ **Bio 151** (3) Advanced Forensic Biology
- _____ **Bio 180** (4) Advanced Molecular Biology
- _____ **Chem 20/20L** (3/1) Organic Chemistry and Lab
- _____ **Chem 31** (4) Quantitative Analysis
- _____ **Chem 161** (3) General Biochemistry
- _____ **Chem 162** (3) General Biochemistry Lab
- _____ **CrJ 4** (3) Investigative Techniques
- _____ **CrJ 121** (3) Structure and Function of American Courts
- _____ **CrJ 154** (3) Introduction to Physical Evidence

Elective Courses (6 units)

- _____ **3 units** from **Structure and Function** Electives
- _____ **3 units** from **Ecol, Evol, Biodiv** Electives