

OSU BIOLOGY MAJOR ADVISING GUIDE 2023-24

(for use with MyDegrees)



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HOW AND WHY TO USE THIS GUIDE:

Welcome to Integrative Biology! The OSU Biology Major Advising Guide is your primary resource for planning your academic program. It also includes other resources important to your success. **You will use it frequently so [bookmark the advising guides website](#) for future reference (the document is frequently updated online).** The advising guides website also includes separate guides for the eight options (concentrations) you may elect to seek as part of your major.

This guide includes a list of all major requirements, course pre-requisites, and when courses are offered. This last point is particularly important because the online Catalog/Schedule of Classes only projects course offerings accurately to the next term and is not useful for planning a year (or years) ahead. Your major requirements are actively tracked in your MyDegrees checklist. But MyDegrees cannot tell you how and when to take what you have remaining. The information in this guide explains how to sequence your courses to complete your degree, and it is what you will use to plan out classes to discuss with your advisor.

STUDENT RESOURCES:

- **Integrative Biology (IB) resources:**
 - **IB Advising Office**, 4th Floor Snell, 541-737-2993, IB.advising@oregonstate.edu (see advising details below)
 - **IB Listserv**: You will be auto-subscribed and receive departmental updates in your OSU email.
 - **IB Website**: Information on careers, major and options, advising, experiential opportunities, and so much more!
 - **IB Club and others**: Participate in the Integrative Biology Club (IBC) or 100s of other organizations.
 - **IB experiential learning opportunities**: Explore a wide range of opportunities in research, internships, biological collections work, undergraduate teaching and study abroad.
 - **IB FAQs**: Many answers to important student questions.
- **Beaver Hub** allows you to make advising appointments and access numerous other student resources. Click on your Success Team in Beaver Hub to find your major (primary) advisor, and you should also review the appointment information below.
- **Academic Success Resources:**
 - **Science Success Center**, Kidder Hall 109, 541-737-3854, is open for registration and other assistance.
 - **Academic Success Center** resources include individual academic coaching and numerous other resources.
 - **Science tutoring centers** and **Supplemental Instruction Tables** for tutoring in a variety of introductory courses.
 - **OSU Academic Regulations** outline the regulations and procedures for all OSU students.
 - **OSU Academic Calendar** lists important quarter dates (OSU is on quarters, not semesters) and deadlines such as the last day to add or drop a course, last day to withdraw, registration dates and more.
- **OSU Dean of Students website** lists a variety of other resources and services to support you.

ACADEMIC PLANNING AND ADVISING:

The **biology major** includes core biological science, chemistry, math and statistics coursework that is mostly completed in the first two years along with much of the OSU Baccalaureate Core (general education). The electives portion of the biology major includes choices to cater to your interests. These require selecting one course for each category of Physics or Computer Science and Quantitative Applications, Biology and Society, Organismal Biology, Physiology, Writing Intensive Course, and Experiential Learning or Integrative Biology, generally in junior, senior or later years. [The learning outcomes for the biology major can be found here.](#)

[Eight, transcript-visible options \(concentrations\)](#) are available for you to declare in the biology major (but are not required). Options require a net of 15 additional credits beyond the base major because part of each one overlaps and stipulates specific courses in some major elective areas. Because of this, they may slightly alter the plans and courses outlined below. The option choices include ecology, genetics, marine biology, physiology and behavior, pre-dentistry, pre-education, pre-medicine (which has pathways for physician, physician assistant, pharmacy, optometry, and others) and pre-veterinary medicine. Many excellent professional goals do not have official options, and a variety of [OSU minors](#) may be beneficial in pursuing goals outside of the official options.

MyDegrees, available in your Beaver Hub is used with this **Biology Major Advising Guide** to plan your degree requirements.

- **MyDegrees Checklist** lets you view your completed courses for all declared programs (major, option, minor). View the [MyDegrees Checklist tutorial](#).
- **The Biology Major Advising Guide** (this document) lets you plan how to complete the requirements you have remaining in the MyDegrees Checklist. There are additional guides for each of the eight options available for biology majors.
- **MyDegrees Planner** is where you store degree plans you create to share with your advisor. View the [planner tutorial](#).

Your **advisor** is based on your major combined with your professional goals and/or option (if you choose to add one). [You can view advisor contact and appointments information here.](#) Students can meet for advising at any time, but use the table below to determine when you **must** meet for advising. Advisors will review the plans you create with your **Biology Major Advising Guide** and save in your **MyDegrees Planner**. They will also assist you with navigating challenges and integrating professional experiences while completing your degree requirements. [Read more about the advisor/advisee responsibilities here](#) , and check out the [advising FAQs](#).

| Who | Must Meet |
|---|------------------------------------|
| First year student, those using military benefits, athletes, honors college | Each term |
| Sophomores | Winter term |
| Juniors | Winter term |
| Transfer students | First term after transfer |
| Seniors | As needed to review for graduation |

ACADEMIC AND ADVISING POLICIES AND GUIDELINES:

- **Ecampus course access:** The biology major is not offered via Ecampus. Though some major courses are available via Ecampus, they may have restricted access and be unavailable to Corvallis students.
- **GPA requirements:** The biology major requires a 2.0 cumulative OSU and major GPA (includes coursework in declared options). The pre-medicine, pre-dentistry and pre-veterinary medicine options require a 3.0 major (not OSU) GPA.
- **Total credit requirements:** You must complete 60 upper division (300-400) and 180 total credits. The biology major and Bacc. Core courses alone do not total 180 credits. No more than 11 PAC or 15 ALS credits can be used to reach 180 required credits. The credit total tracked in My Degrees includes in progress courses.
- **C- for Biology (BI), Math (MTH), and Chemistry (CH):** All students must receive a C- or better in BI 221, 222 and 223; the CH 23x/26x series; and CH 331 and 332 to continue to courses that have these as prerequisites. Also, all math courses require a C- or higher in the previous math course in order to progress to the next one.
- **Double counting courses:** Courses from other majors, minors and Baccalaureate Core (Bacc. Core) courses may be counted for major requirements unless restricted by other programs. No courses may be shared within the major or within the Bacc. Core (even if listed in multiple areas). Option requirements clear major categories as noted and tracked in MyDegrees.
- **S/U and withdraw (W) grading:** Biology students cannot S/U major courses. All OSU students are allowed 18 withdraws.
- **Class Retakes:** Tell your advisor if you are considering retaking a course you first completed at OSU or another school, or if you are repeating an OSU course for the third time. [Students should also review this retake information.](#)
- **Restricted double or dual majors:** No combination of biology, biochemistry and biophysics, biochemistry and molecular biology, biohealth sciences, microbiology, or zoology majors is allowed. Other majors are possible.
- **Chemistry Minor:** A chemistry minor can be completed with one additional course (generally CH 324 Quantitative Analysis, CH 390 Environmental Chemistry). Contact your advisor for approval. CH 324 is major restricted until phase II registration, and students should contact the Chemistry Department or consult the [OSU Schedule of Classes](#) for the timing of offerings.




REGISTRATION INFORMATION:

Registration Date: The OSU Office of the Registrar assigns all students a registration date and time each term based on total credits. Registration dates for the next term are posted around week 5 of the proceeding term (e.g. Winter term registration dates are released week 5 of fall term). To find out when you can register, login to Beaver Hub and click on "View Priority Registration Status" in week 5 the term before ([detailed instructions here](#)). [Priority registration](#) is divided into two phases. You can register for up to 16 credits in Phase I and [waitlisting of courses](#) becomes available in Phase II. If you need a registration PIN (see advising above), you will need to meet for advising before you can register. Plan ahead for this!

Course Restrictions: Courses are often restricted to ensure student access and success, and you can view restrictions (campus, major, prerequisites, class standing, etc.) for course sections in the [OSU Academic Catalog](#) (Schedule of Classes). See the [registration issues and overrides section of the IB website](#) for guidance on how to resolve registration issues that may come up.

BIOLOGY FOUR YEAR PLANS:

These tracks outline ways to complete the degree within four years, averaging 15 credits a term. Tracks are determined by where students start in math (ALEKS placement or transfer credits). The math sequences for OSU biology students is MTH 065 → 103 → 111Z → 112Z → either [MTH 227 & 228] or [MTH 251 & 252]. Courses are listed in order of priority based on prerequisites. Students taking fewer credits should focus on completing courses in earlier areas (higher priority) before considering the next area.

| | Track 1: Initial math placement MTH 103, 111Z, or 112Z | Track 2: Initial math placement MTH 227 or 251 (or credit for MTH 251 and 252) | |
|---|--|--|--|
| 1st Priority (Year one?)  | <ul style="list-style-type: none"> Start MTH (MTH 103, 111Z or 112Z) courses in Fall, continue each term BI 197 or 198 Fall, BI 298 Spring CH 231/261, 232/262, 233/263 Two or more Bacc. Core courses a term: Prioritize COMM 111Z and WR 121Z | <ul style="list-style-type: none"> Start MTH (227 or 251) courses in Winter, continue each term BI 197 or 198 Fall, BI 298 Spring CH 231/261, 232/262, 233/263 BI 221, 222, 223 One Bacc. Core course a term: Prioritize COMM 111Z and WR 121Z | |
| | Track 1 (continued) | Track 2A: Two or more math courses remaining | Track 2B: One or no math courses remaining |
| 2nd priority (Year two?)  | <ul style="list-style-type: none"> BI 221, 222, 223 CH 331, 332, 337 One Bacc. Core course a term: WR 227Z or 362 a priority Finish MTH courses then ST 351, 352 | <ul style="list-style-type: none"> CH 331, 332, 337 One Bacc. Core course a term: WR 227Z or 362 a priority Fill in one BI course a quarter from: BI 370, BI 311, BB 314 Finish MTH then ST 351, 352 | <ul style="list-style-type: none"> CH 331, 332, 337 PH or computational track courses One Bacc. Core course a term: WR 227Z or 362 a priority Finish MTH then one BI course a quarter: BI 370, BI 311, BB 314 |
| 3rd priority (Year three?)  | <ul style="list-style-type: none"> ST 351, 352 if not completed PH or computational track courses Writing Intensive Course Fill in 1 major course a quarter from: BI 370, 311, BB 314, BI 445 BB 450, 451 One Bacc. Core course a term until finished | <ul style="list-style-type: none"> PH or computational track courses BB 450, 451 Writing Intensive Course One Bacc. Core a term until finished BI course(s) not taken 2nd year, then major courses: BI 445, Organismal Biology, Biology & Society, Physiology, and MB 302 & 303 | <ul style="list-style-type: none"> BB 450, 451 ST 351, 352 Writing Intensive Course One Bacc. Core a term until finished BI course(s) not taken 2nd year, then major courses: BI 445, Organismal Biology, Biology & Society, Physiology, and MB 302&303 |
| 4th priority (Year four?) | <ul style="list-style-type: none"> Major courses above not yet completed Fill in with major courses below: Organismal Bio, Bio & Society, Physiology, MB302 & 303 Experiential Learning, Integrative Biology Course, or complete option Complete 180 credits, 60 upper division BI 498 Senior Assessment and Survey: take in final OSU term | <ul style="list-style-type: none"> Major courses above not yet completed Experiential Learning, Integrative Biology Course, or complete option Complete 180 credits, 60 upper division BI 498 Senior Assessment and Survey: take in final OSU term | <ul style="list-style-type: none"> Major courses above not yet completed Experiential Learning, Integrative Biology Course, or complete option Complete 180 credits, 60 upper division BI 498 Senior Assessment and Survey: take in final OSU term |

BACCALAUREATE CORE REQUIREMENTS:

The Baccalaureate Core (Bacc. Core) Curriculum promotes understanding of interrelationships among disciplines in order to increase students' capacities as ethical world citizens. Writing I, Math, and Communications must be completed in the first 45 credits. Some of the courses overlap major requirements and count for both the major and Baccalaureate Core (see notes below).

Skills: These courses build a foundation for success in other courses.

- **Fitness:** HHS 231 lecture & [HHS 241 or Physical Activity Course (PAC) course]
- **Math (1st year):** **Major requires calculus courses.** A C- or better is required in math course prerequisites. Once started, continue this sequence until completed MTH 065 → 103 → 111Z → 112Z → either [MTH 227 & 228] or [MTH 251 & 252]
- **Writing I (1st year WR 121Z).** Registration is by last name with A-G Fall, H-N Winter, O-Z Spring.
- **Writing II (2nd year):** **Major requires WR 227Z or 362.** Must complete in first 90 credits (45 if transfer).
- **Speech (1st year):** **Major requires COMM 111Z.**

BACCALAUREATE CORE REQUIREMENTS (continued):

Perspectives: These build a broader understanding of our multi-faceted world. No more than two courses from any one department may be used to satisfy the perspectives requirements. Each listing represents a category with many course choices.

- **Biological Science, Physical Science:** **Major requires BI 221, 222, 223 and CH 231/261, 232/262, 233/263.**
- **Cultural Diversity** (pick one from list)
- **Literature and the Arts** (pick one from list)
- **Social Processes and Institutions** (pick one from list or psychology if -interested in health and wellness career space)
- **Western Culture** (pick one from list)

Difference, Power and Discrimination:

These address intersections of human identity and experience with institutionalized systems of inequity and privilege in the US.

Synthesis Courses:

These facilitate synthesis of information and experience. As such, they are completed after the other categories above.

Courses used to fulfill the synthesis requirements may not be from the same department.

- **Contemporary Global Issues (CGI):** Taken junior/senior year, **some count toward major or option requirements**
- **Science, Technology, and Society (STS):** Taken junior/senior year, **some count toward major or options requirements**

BIOLOGY MAJOR REQUIREMENTS:

Unless noted, these courses reflect Corvallis campus offerings. Check the OSU Schedule of Classes for other campus offerings.

Biology Core Courses:

Professional Development:

Take (either BI 197 or BI 198 depending on your professional goals) and BI 298 in first year.

| Course | Description | Term(s) | Pre-requisites | Comments |
|-----------|--|---------|----------------|---|
| BI 197 | Professional Develop: Health Profession (1) | F | - | Human health & wellness careers |
| or BI 198 | Professional Develop: Biology & Zoology (1) | F | - | Other, non-human health careers and pre-vet |
| BI 298 | Professional Development for Biologists II (1) | SP | - | Required in 1 st year |

Math & Statistics:

The math sequence is MTH 065 → 103 → 111Z → 112Z → then either Calculus and Probability for Life Sci. [MTH 227 & 228] or Calculus [MTH 251 & 252], both of which work for the vast majority of professional goals. Students strongly interested in mathematics or careers strongly tied to math may want to take MTH 251/252, but others generally take MTH 227/228.

| Course | Description | Term(s) | Pre-requisites | Comments |
|-----------|--|---------|----------------|----------------------------------|
| MTH 227 | Calculus and Probability for Life Sci. I (4) | W, SP | MTH 112Z (C-) | Complete MTH 227 & 228 as series |
| & MTH 228 | Calculus and Probability for Life Sci. 2 (4) | F, SP | MTH 227 (C-) | Complete MTH 227 & 228 as series |
| MTH 251 | Calculus (4) | All | MTH 112Z (C-) | Complete MTH 251 & 252 as series |
| & MTH 252 | Calculus (4) | All | MTH 251 (C-) | Complete MTH 251 & 252 as series |

Take ST 351. then take either Intro to Statistical Methods II (ST 352) -or- Methods of Data Analysis (ST 411 & 412). Students who are particularly interested in statistics and currently involved in working with data can consider taking ST 411/412 in place of ST 352.

| Course | Description | Term(s) | Pre-requisites | Comments |
|-------------|--|---------|----------------|-------------------------------------|
| ST 351 | Introduction to Statistical Methods (4) | All | MTH 111Z | - |
| & ST 352 or | Introduction to Statistical Methods II (4) | All | ST 351 | Take ST 352 or take ST 411 and 412 |
| ST 411 | Methods of Data Analysis (4) | F, W | ST 351 | Discuss this choice with an advisor |
| & ST 412 | Methods of Data Analysis (4) | W, Sp | ST 411 | Discuss this choice with an advisor |

General Chemistry:

| Course | Description | Term(s) | Pre-requisites | Comments |
|-------------|-----------------------------|---------|---------------------|----------------------------|
| CH231 & 261 | General Chem. and Lab (4+1) | F, W | MTH 111Z* or higher | *May be taken concurrently |
| CH232 & 262 | General Chem. and Lab (4+1) | W, Sp | CH 231/261 (C-) | - |
| CH233 & 263 | General Chem. and Lab (4+1) | F, Sp | CH 232/262 (C-) | - |

Principles of Biology:

| Course | Description | Term(s) | Pre-requisites | Comments |
|--------|--|---------|-------------------------------|----------------------------|
| BI 221 | Principles of Biology: Cells (4) | F, Su | CH 231/261* | *May be taken concurrently |
| BI 222 | Principles of Biology: Organisms (4) | W, Su | BI 221 (C-); CH 231/261* (C-) | *May be taken concurrently |
| BI 223 | Principles of Biology: Populations (4) | Sp, Su | BI 221 (C-); CH 231/261 (C-) | - |

Organic Chemistry & Biochemistry:

| Course | Description | Term(s) | Pre-requisites | Comments |
|--------|---------------------------|---------|----------------------------|-----------------------------|
| CH 331 | Organic Chemistry (4) | F, W | CH 233/263 (C-) | - |
| CH 332 | Organic Chemistry (4) | W, Sp | CH 331 (C-) | - |
| CH 337 | Organic Chemistry Lab (4) | F, Sp | CH 332 (C-) | Completed after CH 331, 332 |
| BB 450 | General Biochemistry (4) | F, W | CH 332; BB 314 recommended | - |
| BB 451 | General Biochemistry (3) | W, Sp | BB 450 | - |

Upper Division Biology Core:

| Course | Description | Term(s) | Pre-requisites | Comments |
|------------|----------------------------------|----------|-----------------------------------|----------|
| BI 370 | Ecology (3) | F, W, Sp | BI 221, 222, 223 (C-) | |
| BI 311 | Genetics (4) | F, W, Sp | BI 221, 222, 223 (C-) | |
| BB 314 | Cell and Molecular Biology (4) | F, W, Sp | BI 221, 222, 223 (C-); CH 233/263 | |
| MB 302/303 | General Microbiology & Lab (3+2) | F, W, Sp | CH 332 & BI 221, 222, 223 (C-) | |
| BI 445 | Evolution (3) | F, W, Sp | BI 311 | |

Biology Electives: Declaring an option will alter some categories below - [see options for details](#).

Physics\Computational and Quantitative Applications:

Complete either Track I (Physics) or Track II (Computational and Quantitative Applications) which require similar total credits. Most health profession programs, both human and animal, require physics. Students in other areas of the life sciences have choices. The computer science and quantitative applications pathway includes one or more computer science courses along with a variety of courses examining the application of quantitative and computational skills and thinking in the life sciences.

Track I: Physics – complete three terms of physics (15 credits)

| Course | Description | Term(s) | Pre-requisites | Comments |
|--------|---------------------|---------|---------------------|----------|
| PH 201 | General Physics (5) | F, Su | MTH 112Z or higher | - |
| PH 202 | General Physics (5) | W, Su | MTH 112Z and PH 201 | - |
| PH 203 | General Physics (5) | Sp, Su | MTH 112Z and PH 202 | - |

Track II: Computational and Quantitative Applications – take 4 courses (13-15 credits)

Complete two computer science/quantitative reasoning courses – (BDS 211 and (CS 201 or BB 345)) -or- (BDS 310 and 311))

| Course | Description | Term(s) | Pre-requisites | Comments |
|----------------------------------|--|--------------------|---|---------------|
| BDS 211 & CS 201 OR BB 345 | Use & Abuse of Data: Critical Think. in Sci. (3) Computer Programming Non-CS Majors (3) Python for Molecular Biologist (3) | Sp W*, SU* F | MTH 251 (C-) or 227 (C-) MTH 111Z | *Ecampus only |
| OR BDS 310 & BDS 311 | Foundation of Biological Data Sciences (4) Computational Approaches for Biol. Data (3) | F W | MTH 251 (C-) or MTH 227 (C-) BDS 310 (C-) or CS 161 (C-) | |

Complete two additional computational and quantitative electives from the list below to complete track II

| Course | Description | Term(s) | Pre-requisites | Comments |
|--------------------|---|----------|---|-----------------------|
| BB 485 | Applied Bioinformatics (3) | W* | BI 221 (C-) & (BB 345, BDS 310, CS 161 or CS 201) | *Not offered W 2024 |
| BDS/CS 446 | Networks in Computation Biology (3) | W* | MTH 251 (C-) | *See catalog |
| BDS 472 | Advanced Computational Biological Data Analysis (3) | Sp | BDS 311 (C-) or 162 (C-) & BI 221 (C-) | *See catalog |
| BDS 475 | Comparative Genomics (4) | W | BB 314 (C-) & BI 311 (C-) | - |
| BDS 477 | Population Genomics (3) | Sp | BDS 310 (C-) | - |
| BDS 478 | Functional Genomics (3) | W | BB 314 (C-) | - |
| BI 456 | Phylogenetics (4) | W* | (ST 352 or 411) & BI 311 | *Alternate even years |
| BI 481 | Biogeography (3) | W* | BI 370 | *Alternate odd years |
| BI 483 | Population Biology (3) | W | (BI 311 or 370 (& MTH 227 or 252) & (ST352* or 411*)) | *May be concurrent |
| FW 433 | Population Dynamics for Conservation (4) | Sp | (FW 320 or BI 483) (C-) & (MTH 228 or 252) (C-) | *See catalog |
| GEOG 360 | GIScience I: GIS Info. Systems & Theory (4) | F, W, Sp | MTH 112Z, ST 351 | - |
| GEOG 361 or 460 | Quant. Geospatial Analysis & Modeling (4) GIS & Spatial Data Science (4) | W Sp | GEOG 360 (C-), MTH 112Z(C-), ST 351(C-) GEOG 360 (C-), MTH 112Z (C-), ST 351(C-) | - - |
| OC 449 | Ecol. Theories in Biol. and Fisheries Data (4) | Sp* | (MTH 228 or 252) (C-), ST 351 (C-), BI 370 (C-) | *Alternate even years |
| ST 415 | Design and Analysis of Planned Experiments | Sp* | ST 352 or ST 411 | *See catalog |
| ST 431 | Sampling Methods (3) | F | ST 411* | *Or override |

Biology and Society:

Take one of the following (or see option). All courses in this category also count within the Bacc. Core (see comments column after "BC"). These courses examine a social/cultural context within the life sciences.

| Course | Description | Term(s) | Pre-requisites | Comments |
|--------------|--|--------------|--|--|
| AEC 351 | Natural Resource Econ. & Policy (3) | W | Sophomore +; AEC 250, AREC 250 or ECON 201 | *See catalog; BC: Contemporary Global Issues |
| AEC/ECON 352 | Environmental Econ. & Policy (3) | F, Sp | Sophomore +; AEC 250 or ECON 201 | *See catalog; BC: Contemporary Global Issues |
| BB 220 | Cancer: Society's Malignant Shadow | Sp* | - | *See catalog; BC: Difference, Power & Discrimination. |
| BB 331 | Introduction to Molecular Biology (3) | W | Sophomore +; CH 232 & 262 | *See catalog; BC: Science, Tech. & Society |
| BB 332 | Molecular Medicine (3) | F | Sophomore +; BI 221 | BC: Science, Tech. & Society |
| BI 175 | Genomes, Identities and Society (3) | W* | - | *Alternate odd winter terms; BC: Difference, Power & Discrimination |
| BI 301 | Human Impacts on Ecosystems (3) | W | Sophomore +; BI 221, 222, 223 & CH 233/363 | BC: Contemporary Global Issues |
| BI 306H | Environmental Ecology (3) | F* | BI 221, 222, 223 & CH 233/263 | *See catalog; offered as Honors College only; BC: Contemp. Global Issues |
| BI 345 | Introduction to Evolution (3) | Sp*, Su* | Sophomore + | * Ecampus only ; BC: Science, Tech. & Society |
| BI 347 | Oceans in Peril (3) | W | Sophomore +; BI 150 or 221 | BC: Science, Tech. & Society |
| BI 348 | Human Ecology (3) | Sp* | Sophomore + | * Ecampus only ; BC: Science, Tech. & Society |
| BOT 324 | Fungi in Society (3) | Sp | BI 221 | BC: Science, Tech. & Society |
| FES/TOX 435 | Genes, Chemicals in Agriculture (3) | Sp | Sophomore + | BC: Science, Tech. & Society |
| FW 350 | Endangered Species, Society & Sustain. (3) | F | Sophomore + | BC: Science, Tech. & Society |
| H 312 | HIV/AIDS and STIS in Society (3) | F, W, Sp | Sophomore + | BC: Contemporary Global Issues |
| HSTS 417 | History of Medicine | All* | Sophomore + | *See catalog; BC: Science, Tech. & Society; Ecampus only |
| MB 330 | Disease and Society (3) | W*, Sp*, Su* | | *BC: Difference, Power & Discrimination, Ecampus only |
| REL/PHL 444 | Biomedical Ethics | All* | Sophomore + | *See catalog; BC: Science, Tech. & Society; Ecampus only |
| Z 349 | Biodiversity: Causes & Conservation (3) | F, W | Sophomore + | BC: Contemporary Global Issues |

Organismal Biology:

Take one of the following (or see option)

| Course | Description | Term(s) | Pre-requisites | Comments |
|-------------|--|---------|---------------------------------|----------------------------------|
| BI 427 | Paleobiology (4) | Sp | BI 221, 222, 223 (C-) | - |
| BOT 321 | Plant Systematics (4) | Sp | BI 221, 222, 223 (C-) | - |
| BOT 416 | Aquatic Botany (4) | F | BI 221, 222, 223 (C-) | - |
| BOT 461 | Introduction to Mycology (4) | F | BI 221, 222, 223 (C-) | - |
| Z 361 & 362 | Invertebrate Biology & Lab (3+2) | Sp | BI 221, 222, 223 (C-) | Z 361 and 362 are taken together |
| Z 371 & 372 | Vertebrate Biology & Lab (3+2) | F | BI 221, 222, 223 (C-) | Z 371 and 372 are taken together |
| Z 422 | Comparative/Functional Vert. Anat. (5) | F | BI 221, 222, 223 (C-) | - |
| Z 461 | Marine & Estuarine Invertebrates (4) | Su* | BI 221, 222, 223 (C-) | * Hatfield campus only |
| Z 477 | Aquatic Entomology (4) | W* | BI 221, 222, 223 (C-), junior + | *Alternate odd years |

Physiology:

Take one of the following (or see option)

| Course | Description | Term(s) | Pre-requisites | Comments |
|-------------------------|---|---------|--|---|
| BI 331/341 & BI 332/342 | Adv. Human Anat. & Phys. / Lab I & II ((3+2) & (3+2)) | F, W | BI 221, 222, 223 (C-), CH 233/263 (C-), junior + | Must complete both terms of lecture and lab |
| BOT 331 | Plant Physiology (4) | W | BI 221, 222, 223 (C-), CH 233/ 263 (C-) | - |
| BOT 488 | Environmental Physiology of Plants (3) | W | BI 370 | - |
| Z 423 | Environmental Physiology (3) | F | BI 221, 222, 223 (C-); CH 233/263 (C-) | - |
| Z 425 | Embryology & Development (5) | F | BI 311 & BB 314, junior + | - |
| Z 431 | Vertebrate Physiology (3) | W | BI 221, 222, 223 (C-) and CH 332* (C-) | *May be taken concurrently |

Writing Intensive Course (WIC):

Take one of the following (or see option)

| Course | Description | Term(s) | Pre-requisites | Comments |
|--------|---|----------|-------------------------------|----------|
| BI 319 | Theory, Practice, Discourse Life Sci. (3) | F, W, Sp | BI 221, 222, 223 (C-), ST 351 | - |
| BI 371 | Ecological Methods (3) | Sp | BI 370 | - |
| BI 373 | Field Methods in Marine Ecology (3) | Sp | BI 370 or BI 351 | - |

Experiential Learning or Integrative Biology Elective (if not completing an option):

Complete an addition course (not used for other major requirements) by completing Track I (Experiential Learning) or Track II (Integrative Biology Course). Experiential learning is not required and students must identify these opportunities and then apply for credit. More details can be found on the linked forms below.

Track 1: Experiential Learning – complete any combination of 3 credits of the following. Students must apply and be accepted to these courses before the term they intend to participate, and the courses include assignments beyond completing the experience.

| Course | Description | Term | Pre-requisites | Comments |
|--------|--------------------------------------|------|-------------------------------------|-------------------------------|
| BI 309 | Teaching Practicum (1-3) | All | Department application and approval | See form here |
| BI 401 | Research (1-3) | All | Department application and approval | See form here |
| BI 406 | Projects: Curatorial Assistant (1-3) | All | Department application and approval | See form here |
| BI 409 | Advanced Teach Practicum (1-3) | All | Department application and approval | See form here |
| BI 410 | Internship (1-3) | All | Department application and approval | See form here |

Track 2: Integrative Biology Course – select one additional course not used for other major requirements.

| Course | Description | Term | Pre-requisites | Comments |
|--------------|---|---------|--|--|
| BI 333 & 343 | Adv. Human Anat. & Phys. / Lab (3+2) | Sp | BI 332 and 342 (C-) | - |
| BI 353 | Pacific NW Coastal Ecosystems (4) | Su* | BI 221, 222, 223 (C-) | * Hatfield campus only |
| BI 358 | Symbiosis and the Environment (3) | W* | BI 221, 222, 223 (C-), CH 233/263 (C-) | * See Catalog, alternate even years |
| BI 375 | Field Methods in Ecol. Restoration (4) | Su* | BI 221, 222, 223 (C-) | *Cascades campus only |
| BI 427 | Paleobiology (4) | Sp* | BI 221, 222, 223 (C-) | Cannot also be counted above |
| BI 450 | Marine Biology (15) | Sp* | BI 370 & ST 351 (352 recommended) | *Hatfield campus only |
| BI 454 | Evolutionary Genomics | Sp* | BI 311 | *See Catalog, alternate odd years, cannot also be counted above |
| BI 456 | Phylogenetics (4) | W* | ST 352; BI 311 | *See Catalog, alternate even years, cannot also be counted above |
| BI 481 | Biogeography (3) | W* | BI 370 | *See Catalog, alternate odd years, cannot also be counted above |
| BI 483 | Population Biology (3) | W | (BI311 or 370 & MTH 227 or 252) & (ST352* or 411*) | *May be taken concurrently, cannot also be counted above |
| BI 485 | Monster Biology (3) | W | BI 311* & BI 370*, junior + | *May be taken concurrently |
| BI 495 | Disease Ecology (3) | W* | BI 370 (C-) | *See Catalog, alternate even years |
| Z 350 | Animal Behavior (3) | W, Sp | BI 221, 222, 223 (C-) | - |
| Z 361 & 362 | Invertebrate Biology & Lab (3+2) | Sp | BI 221, 222, 223 (C-) | Cannot also be counted above |
| Z 365 | Biology of Insects (4) | Sp* | BI 221, 222, 223 (C-) | *Ecampus only |
| Z 371 & 372 | Vertebrate Biology AND Lab (3+2) | F | BI 211, 212, 213 (C-) | Cannot also be counted above |
| Z 423 | Environmental Physiology | F | BI 221, 222, 223 (C-); CH 233/263 (C-) | Cannot also be counted above |
| Z 425 | Embryology & Development (5) | F | BI 311 & BB 314, junior + | Cannot also be counted above |
| Z 432 & 442 | Vertebrate Physiology II and Lab (3+2) | Sp | Z 431 (C-) | |
| Z 438 | Behavioral Neurobiology (3) | Sp | BI 221, 222, 223 (C-) & CH 233/263 (C-) | - |
| Z 461 | Marine & Estuarine Invert. Zoology (4) | Su* | BI 221, 222, 223 (C-) | *Hatfield campus only , cannot also be counted above |
| Z 473 | Herpetology (4) | F*, Sp* | BI 221, 222, 223 (C-) | *Ecampus only |

BI 498 Senior Assessment and Survey:

[BI 498 Senior Assessment and Survey](#) is a self-paced CANVAS course that must be registered for and completed in your final term.

| Course | Description | Term(s) | Pre-/co-requisites | Comments |
|--------|-----------------------------------|---------|-----------------------------------|-----------------------------------|
| BI 498 | Seniors Assessment and Survey (0) | All | Required completion in final term | You must register for this course |