

# Biology Major - Education Option Guide 2022-23

Document available online at <https://ib.oregonstate.edu/advising/planners>.

Courses used to satisfy these requirements also satisfy the Experiential Learning or Integrative Biology Elective in the Biology major. Other coursework taken abroad or at Hatfield may be approved by the IB Lead Advisor. This option is designed for the OSU Master of Science in Education program not the OSU Education Double Degree. **Previous versions of this option are different and tracked in MyDegrees – see MyDegrees for details. All courses and prerequisites are subject to change, and the listing of term offered is based on projected Corvallis offerings.**

## Licensure and Endorsement:

A teaching license specifies that you are qualified to teach. This option meets the requirements for most graduate teacher licensure programs awarding endorsements in middle school integrated sciences, high school biology and/or high school chemistry. Students should work with the IB pre-education advisor to select electives appropriate to their goals. Students should carefully review the program requirements for teaching license programs they plan to apply to.

**Endorsements:** These specify additional content you are qualified to teach. The Biology major with the Education option will cover the needed courses for the Biology endorsement. If wanted, you can pursue additional endorsements in Chemistry or Integrated Science using the electives listed below. All endorsements require specific courses as outlined on the respective [Content Mastery sheets](#).

## Pre-Education Resources:

**Classroom Experience:** Experience in the classroom is required for Biology Pre-Education students and is gained through the practicum courses required for the Pre-Ed option (see ED 309 information). Additional experience in a teaching and learning environment is highly recommended. It is important to get experience early on in your degree to help you determine if a career in education is right for you. There are many opportunities on campus to get teaching experience. Use the resources here to get involved in formal and informal education.

**ED 309 (required for option):** To enroll in ED 309, you are required to complete fingerprinting and a criminal history background check through the College of Education. ED 309 will match you with a local teacher and requires you complete practicum hours during the term. More information about [ED 309 and the Intake/Override form is here](#). [Carol McKiel](#) can help with planning and other questions.

**BI 309 and BI 409:** These offer students a unique opportunity to work with faculty in delivering instruction at the college level. These courses provide formal training on instructional techniques for classroom and lab settings. This is especially valuable for students aspiring to teach biology in a high school (especially AP courses) or community college setting.

**Accelerated Master's Platform (AMP):** The AMP program allows accepted seniors to take graduate level coursework (generally up to 9 credits) that they can apply to their Biology major and the OSU MS in Science Education while paying undergraduate tuition. Students apply the year prior (generally junior year), and applicants must have a 3.25+ GPA and 105 credits to apply. [More information is on the AMP website](#).

## Science Education Core Courses:

Course	Description	Term(s)	Pre-/co-requisites	Comments
ED 309	Field Practicum (grade 6-12 experience) (3cr)*	F, W	By application	*3+ credits required
ED 472	Foundations of ESOL Education (3cr)	F, W, Sp	-	-
HDFS 313	Adolescent Development (4cr)	F, Sp	Sophomore +	-
SED 413	Inquiry in Science and Science Education (3cr)	W, online Sp	-	-
PH 201, 202, 203	General Physics (5cr, 5cr, 5cr)	F, W, Sp, Su	MTH 112	-

## Option Electives:

Take two or more electives, at least one needs to be upper division (300-400 level) to complete the option. Work with the Pre-Education advisor on which ones make most sense for you. If an elective also relates to an endorsement, it is grouped with other electives for that endorsement.

**OSU Integrated Science Endorsement:** Demonstrating content mastery for this endorsement will require four courses beyond the Biology major and Pre-Ed core (as listed on the [Content Mastery sheet](#)). One in each of the Content Areas listed in the last column. Recall that the option only requires two electives, though you can choose to do more.

Course	Description	Term(s)	Pre-/co-requisites	Content Area
PH 104	Descriptive Astronomy (4cr)	All	-	Astronomy
ATS 201 <u>or</u>	Climate Science (4cr)	F, W, Sp	CH 233/263	Atmospheric Sciences
ATS 310	Meteorology (4cr)	F	MTH 251 & PH 201, 202	Atmospheric Sciences
GEO 201 <u>or</u>	Physical Geology (4cr)	F	-	Geology
GEO 202 <u>or</u>	Earth Systems Science (4cr)	W	-	Geology
GEO 203 <u>or</u>	Evolution of Planet Earth (4cr)	Sp	-	Geology
GEO 221 <u>or</u>	Environmental Geology (4cr)	Sp	-	Geology
GEO 305 <u>or</u>	Living with Active Cascade Volcanoes (3cr)	Sp	-	Geology
GEO 306 <u>or</u>	Minerals, Energy, Water & Environment (3cr)	Sp	-	Geology
GEO 307 <u>or</u>	National Park Geology and Preservation (3cr)	F	-	Geology
GEO 308 <u>or</u>	Global Change and Earth Science (3cr)	F, W	-	Geology
GEO 352	Oregon Geology (4cr)	?	-	Geology
OC 201 <u>or</u>	Oceanography (4cr)	F, W	-	Oceanography
OC 332	Coastal Oceanography (3cr)	W	-	Oceanography

**OSU Chemistry Endorsement:**

Course	Description	Term(s)	Pre-/co-requisites	Comments
CH 411	Inorganic Chemistry (3cr)	F	CH 233/263 & PH 201, 202, 203	-

**Other Elective Options (not relating to additional endorsements):**

Course	Description	Term(s)	Pre-/co-requisites	Comments
BI 309 <b>or</b>	Teaching Practicum (1-3cr) *	F, W, Sp	*Departmental approval required	*3+ credits required
BI 409	Advanced Practicum (1-3cr) *	F, W, Sp	*Departmental approval required	*3+ credits required
BI 333 & 343	Adv. Human Anatomy & Phys & Lab (3cr)	Sp	BI 332, BI 342 (C-)	-
BI 353	Pacific Northwest Coastal Ecosy. (3cr)	Su*	BI 221, 222, 223 (C-)	*Hatfield
BI 358	Symbiosis and the Environment (3cr)	Alternate W	BI 221, 222, 223 (C-)	-
BI 375	Field Methods Ecol. Restoration (4cr)	Su*	BI 221, 222, 223 (C-)	*Cascades campus
BI 427	Paleobiology (4cr)	Sp	BI 221, 222, 223 (C-)	-
BI 456	Phylogenetics (4cr)	Alternate W	ST 352, BI 311	-
BI 481	Biogeography (4cr)	Alternate W	BI 370	-
BI 483	Population Biology (3cr)	W	(MTH 251 or 227), ST 351, (BI 370 or 311)	-
BI 485	Monster Biology (3cr)	W	BI 311*, BI 370*	*May be concurrent
BI 495	Disease Ecology (3cr)	Alternate W	BI 370	-
Z 350	Animal Behavior (3cr)	W	BI 221, 222, 223 (C-)	-
Z 361 & 362 <b>or</b>	Invertebrate Zoology & Lab (3cr+2cr)	Sp	BI 221, 222, 223 (C-)	-
Z 461 <b>or</b>	Marine & Estuarine Invert. (4cr)	Su*	BI 221, 222, 223 (C-)	* Hatfield
BI 450	Marine Biology & Ecology (15cr)	Sp*	BI 370, ST 351	*Hatfield
Z 365	Biology of Insects (4cr)	Sp*	BI 221, 222, 223 (C-)	*Online only
Z 371 & 372	Vertebrate Zoology & Lab (3cr+2cr)	F	BI 221, 222, 223 (C-)	-
Z 425	Embryology and Development (5cr)	F	BI 311, BB 314	Junior +
Z 432 & 442	Vertebrate Physiology II & Lab (3cr+2cr)	Sp	Z 431 (C-)	-
Z 438	Behavioral Neurobiology (3cr)	Sp	BI 221, 222, 223 (C-) & CH 233/263	-
Z 473	Herpetology (4cr)	F, Sp*	BI 221, 222, 223 (C-)	*Online only

**Other Related Links****OSU Licensure Programs in Education**

For more information, contact [Carol McKiel](#)

**[OSU MS in Education \(Science Education\)](#)**

**[OSU Education Double Degree](#)** (Not designed for the BI Pre-Education Option)

**Oregon Teacher Licensing**

[Teacher Standards and Practices Commission](#)

**More Teaching Opportunities**

[Volunteering and Internship list](#)  
[International education internships](#)

**National Teacher Resources**

[Teacher certification map](#)  
[U.S. Department of Education](#)  
[National Science Teachers Association](#)  
[National Education Association](#)  
[Oregon Science Teachers Association](#)