

BIOLOGY MAJOR— Pre-Education Option 2021-22

This Pre-Education option is designed to meet 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 elective courses appropriate to meeting their goals. This option is NOT designed for the OSU Education Double Degree or informal education master's program in free-choice learning (see other side of this document). Students should carefully review the specific program requirements and prerequisites for teaching programs they plan to apply to.

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. **Previous versions of this option are different and are 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 campus offerings.**

Course	Pre(Co)requisites	Term	Credits
Science Education Core			
ED 309* Field Practicum (middle and/or high school experience)	*At least 3 credits required	F, W	3
HDFS 313 Adolescent Development	Sophomore Standing	W, SP	4
SED 413/513 Inquiry in Science and Science Education		W, Online SP	3
PH 201, 202, 203 General Physics	MTH 112	F, W, SP, SU	5, 5, 5
Electives (work with the Pre-Education advisor to select three or more courses, two upper division (300-400 level))			
Astronomy (OSU Integrated Science Endorsement)			
PH 104	BB 450	F, W, SP, SU	3
Atmospheric Sciences (OSU Integrated Science Endorsement)			
ATS 201 Climate Science	CH 233/263	F, W, SP	4
ATS 310 Meteorology	MTH 251 and (PH 201 and 202)	F	4
Biology Teaching (Additional teaching experience—any combination of 3 credits)			
BI 309 Teaching Practicum OR BI 409 Advanced Practicum	Departmental approval	F, W, SP	1-2
Chemistry (OSU Chemistry endorsement)			
CH 411 Inorganic Chemistry (3)	CH 23x/26x and PH 20x series	F	4
Geology (OSU Integrated Science endorsement)			
GEO 201 Physical Geology		F	4
GEO 202 Earth Systems Science		W	4
GEO 203 Evolution of Planet Earth		SP	4
GEO 221 Environmental Geology		SP	4
GEO 305 Living with Active Cascade Volcanoes		SP	3
GEO 306 Minerals, Energy, Water and the Environment		SP	3
GEO 307 National Park Geology and Preservation		F	3
GEO 308 Global Change and Earth Science		F,W	3
GEO 352 Oregon Geology: Geology, place and life in Pac.		?	4
Integrative Biology (cannot be shared with other major requirements)			
BI 333 and BI 343 Adv. Human Anatomy & Physiology & Lab	BI 332 and BI 342 (C-)	SP	3
BI 353 Pacific Northwest Coastal Ecosy. (taught at Hatfield)	BI 221, 222, 223 (C-)	SU	3
BI 358 Symbiosis and the Environment	BI 221, 222, 223 (C-)	Alternate W	3
BI 375 Field Methods Ecol. Restoration (taught at Cascades)	BI 221, 222, 223 (C-)	SU	4
BI 427 Paleobiology	BI 221, 222, 223 (C-)	SP	4
BI 456 Phylogenetics	ST 351, 352 and BI 311	Alternate W	4
BI 481 Biogeography	BI 370	Alternate W	4
BI 483 Population Biology	(MTH 251 or 227), ST 351, (BI 370 or 311)	W	3
BI 485 Monster Biology	BI 311, BI 370 (may be concurrent)	W	3
BI 495 Disease Ecology	BI 370	Alternate W	3
Z 350 Animal Behavior	BI 221, 222, 223 (C-)	W	3
Integrative Biology list continued on next page			

Integrative Biology (continued from the first page)			
Z 361 and 362 Invertebrate Zoology and Laboratory OR Z 461 Marine & Estuarine Invert. (taught at Hatfield) OR BI 450 Marine Biology & Ecology (taught at Hatfield)	BI 221, 222, 223 (C-) BI 221, 222, 223 (C-) BI 370 and ST 351	SP SU SP	3+2 4 15
Z 365 Biology of Insects	BI 221, 222, 223 (C-); online only	Online only	4
Z 371 and 372 Vertebrate Zoology and Laboratory	BI 221, 222, 223 (C-)	F	3+2
Z 425 Embryology and Development	BI 311 and BB 314	?	5
Z 432 and Z 442 Vertebrate Physiology II and Laboratory	Z 431 C-	SP	3+2
Z 438 Behavioral Neurobiology	BI 221, 222, 223 (C-) & CH 23x/26x	SP	3
Z 473 Herpetology	BI 221, 222, 223 (C-); online only	Online only	4
Oceanography (OSU Integrated Science endorsement)			
OC 201 Oceanography		F, W	4
OC 332 Coastal Oceanography		W	3

OSU Biology 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 checklist and description to the right).

Additional experience in a teaching and learning environment is highly recommended. It is important to get experience early on in your academic career to help you determine if a career in education is right for you.

There are abundant opportunities on campus to get teaching experience. Use the resources listed here to get involved in formal and informal education experiences.

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 to receive an

override. If you're interested in registering for either of the options go to Furman Hall room 104 for required paperwork.

ED 309 requires that you meet your practicum hours during the academic term. The first class session attendance is mandatory, and you'll be matched with a local teacher during the first class session. There are 4 mandatory class sessions throughout the term.

BI 309 and BI 409

BI 309/409 offers students a unique opportunity to work collaboratively with faculty in delivering biological science instruction at the college level. This experience will provide formal training in strategies for successful instructional techniques related to implementing learning activities in classroom and laboratory settings. Students will also work on developing and piloting teaching tools while honing basic biology skills and

knowledge. This option is especially valuable for students aspiring to teach biology in a high school (AP) or community college setting.

Accelerated Master's Platform (AMP):

The AMP program allows accepted seniors to take up to 12 credits of graduate level coursework that they can apply to their Biology major and an MS in Science Education, while paying undergraduate tuition. Students apply the year before taking AMP courses (generally junior year), and applicants must have a 3.2+ GPA and 105 credits to apply. [More information is on the AMP website.](#)

OSU Licensure Programs in Education

OSU MS in Education (Science Education)

<http://education.oregonstate.edu/master-science-education>

For more information, contact :
Carol McKiel: 541-737-1546

OSU Education Double Degree

(Not designed for the BI Pre-Education Option)

<http://education.oregonstate.edu/double-degree>

Graduate Options Informal Education

OSU's Free-Choice Learning Program prepares for teaching in areas such as:

- Interpretive centers & Outreach
 - National and State Parks
 - Zoos/aquariums, nature centers
- <http://education.oregonstate.edu/free-choice-learning>

Oregon Teacher Licensing

Teacher Standards and Practices Commission:

<http://www.oregon.gov/TSPC/Pages/index.aspx>

National Teacher Resources

Teacher certification map
<http://certificationmap.com/>

U.S. Department of Education
<http://www.ed.gov/>

National Science Teachers Association
<http://www.nsta.org/>

National Education Association
<http://www.nea.org/>

Oregon Science Teachers Association
<http://www.oregonscience.org/>

More Teaching Opportunities

Find out how to get involved at: <http://oregonstate.edu/precollege/>

Volunteering and Internship list: <http://ib.oregonstate.edu/professional/internship-research/intern-volunteer-list/education>

International education internships: <http://ib.oregonstate.edu/professional/international>