

OSU BIOLOGY MAJOR ADVISING GUIDE 2018-2019

(FOR USE WITH MYDEGREES)



DEPARTMENT AND ADVISING INFORMATION

Contacts:

- Department of Integrative Biology, 3029 Cordley Hall, 541-737-2993, ib@oregonstate.edu
- The Biosphere student lounge, 3019 Cordley Hall
- Integrative Biology Club (IBC): All biology students are automatically members. Contact integrativebiologyclub@oregonstate.edu or see Facebook for details on upcoming events.

Advising Appointments: Make appointments at <http://ib.oregonstate.edu/advising/appointments>

	Fall	Winter	Spring
First year student must meet each term	X	X	X
Sophomores must meet winter OR spring term		X	X
Juniors must meet winter OR spring term		X	X
Transfer students meet their first term after transferring	?	?	?
Seniors meet as needed to review for graduation	?	?	?

Tools:

- **Degree Checklists:** See MyDegrees in your Student Online Services, MyDegrees to view your major checklist.
- **Listserv:** Current students are auto-subscribed to the major listserv and receive posts in their ONID account.
- **IB Website:** see information about student clubs, study abroad, internship, and research opportunities <http://ib.oregonstate.edu/undergraduates>.

Rules:

- **GPA requirement:** The Biology major requires a 2.0 cumulative OSU and major GPA to graduate. The Pre-Medicine, Pre-Dentistry and Pre-Veterinary Medicine options require a 3.0 major GPA.
- **C- requirement for Biology (BI 21x), Math (MTH) and Chemistry (CH):** All students must receive a C- or better in any math (MTH) and BI 211, 212 and 213 or CH 23x/26x series and CH 331 to continue on to courses that have these courses as prerequisites (e.g. MTH 251, CH 232/262, BI 370).
- **Double counting courses:** Appropriate minor, major and Bacc Core Synthesis courses may count for the major upper division science electives requirement. Some major requirements also count for Baccalaureate Core courses. Options also clear categories of the major in some cases – see the options <http://ib.oregonstate.edu/advising/planners>.
- **S/U and withdraw (W):** Biology students cannot S/U major courses and are only allowed 12 course withdraws.
- **Double or dual majors** are not allowed in Biology, Biochemistry and Biophysics, Biochemistry and Molecular Biology, Biohealth Sciences, Microbiology or Zoology.
- **Options in Biology are optional** and transcript-visible and may alter the plans below. They include Ecology, Genetics, Marine Biology, Physiology and Behavior, Pre-Dentistry, Pre-Education, Pre-Medicine/Pre-Physician Assistant and Pre-Veterinary Medicine – see the option planners at <http://ib.oregonstate.edu/advising/planners>. Many other professional goals with no official options are possible.
- **Chemistry Minor:** The Chemistry Minor can be completed by taking one additional course (most students choose CH 324, CH 390 or CH 424) which also count as upper division science electives – talk to the Chemistry Department for approval and details. The CH 324 course is often restricted by major until phase II of registration.
- **Class Retakes:** OSU academic regulations often result in retakes not working the way students expect in terms of their GPA and requirements. If you are considering repeating a course you first completed at OSU or another school or you are repeating any OSU course for the third time, you should bring this to the attention of your advisor. Students can also review the retake information at <https://ib.oregonstate.edu/advising/faq/retake-gpa> for additional detailed information.

BIOLOGY FOUR-YEAR PLANS

- **Major courses are listed in order of priority.** Students planning to finish in four years should average 15 credits a term.
- **OSU math sequences for Biology students:** MTH 065, 103, 111, 112, & [MTH 227 & 228] or [MTH 251 & 252]

Track I

Placed MTH 103,111 or 112

1st Year

- Start MTH Fall
- BI 197 or 198 Fall, BI 298 Spring
- CH 231 & 261, 232 & 262, 233 & 263
- Two Bacc. Core courses each term

2nd Year

- BI 211, 212, 213
- CH 331, 332, 337
- One Bacc. Core course a quarter
- Finish MTH courses then ST 351, 352

3rd Year

- ST 351, 352 if not completed above
- PH 201, 202, 203 or CS 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 a term until finished

4th Year

- Major courses not taken 3rd year
- Fill in with major courses below:
Organismal Biol., Biol. & Society,
Physiology, MB 302 & 303
- Two upper division science elective courses or complete option
- Complete coursework totaling 180/60 upper division credits
- BI 498 Biology Major Field Test
Summer graduates take spring term, all others take last OSU term.

1st Year Tracks II and III (MTH 251 placement/credit)

- BI 197 or 198 Fall, BI 298 Spring
- BI 211, 212, 213
- CH 231 & 261, 232 & 262, 233 & 263
- 1 Baccalaureate Core (Bacc. Core) course a quarter
- MTH starts in winter or spring

Track II

If one or no math courses remaining

2nd Year

- CH 331, 332, 337
- PH 201, 202, 203 or CS track courses
- One Bacc. Core Course a quarter
- Finish MTH then 1 BI course a quarter:
BI 370, BI 311, BB 314

3rd Year

- 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 Year

- Major course(s) not taken 3rd year
- 2 upper division science elective courses or complete option
- Complete 180/60 upper div. credits
- BI 498 Biology Major Field Test –
Summer graduates take spring, all others take last OSU term.

Track III

If two or more math courses remaining

2nd Year

- CH 331, 332, 337
- One Bacc. Core Course a quarter
- Fill in 1 BI course a quarter from:
BI 370, BI 311, BB 314
- Finish MTH then ST 351 and 352

3rd Year

- PH 201, 202, 203 or CS track courses
- BB 450, 451
- Writing Intensive Course
- 1 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 Year

- Major course(s) not taken 3rd year
- 2 upper division science elective courses or complete option
- Complete 180/60 upper div. credits
- BI 498 Biology Major Field Test
Summer graduates take spring, all others take last OSU term.

BACCALAUREATE CORE REQUIREMENTS

Category	Notes
Skills	
Fitness (HHS 231) & Fitness Lab (HHS Lab or PAC)	
Math (C- or better required in math course prerequisites)	Completed as part of major; must complete in 1 st 45 OSU credits
Writing I = WR 121 (A-G Fall, H-N Winter, O-Z Spring)	Must complete in 1 st 45 OSU credits
Writing II = HC 199, 327 or 362 major (or WR 222)	Completed as listed here; must complete 1 st 90 credits (45 if transfer)
Speech = COMM 111 OR COMM 218 for human health professions students, not veterinary medicine.	Completed as listed here; must complete 1 st 45 credits (45 if transfer)
Perspectives - No more than two courses from any one department may be used to satisfy the perspectives requirement	
Biological and Physical Science and second course	Completed as part of major
Cultural Diversity	
Literature and the Arts	
Social Processes and Institutions	PSY for health professions; GEO 204 recommended for others
Western Culture	
Difference, Power and Discrimination	
Difference, Power and Discrimination	
Synthesis Courses - 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 options
Science, Technology, and Society (STS)	Taken junior/senior year, some count toward major or options

BIOLOGY MAJOR REQUIREMENTS

Biology Core Courses	F	W	SP	SU	Pre(Co)Requisites / Comments
BI 197 or BI 198 Professional Development I (1)	X				
BI 298 Professional Development for Biologists II (1)			X		
MTH 227 Calculus and Probability for Life Sci. I (4) AND		X	X		C - or better in MTH 112 (complete 227 and 228 as series)
MTH 228 Calculus and Probability for Life Sci. 2 (4)	X		X		C - or better in MTH 112 (complete 227 and 228 as series)
OR MTH 251 Calculus (4) AND MTH 252 Calculus (4)	X	X	X	X	251: C - or better in MTH 112, 252: C - or better in MTH 251
CH 231 & 261 General Chem. and Lab (4+1)	X	X		X	Math placement or one term CH 101
CH 232 & 262 General Chem. and Lab (4+1)		X	X	X	C- or better in CH 231/261
CH 233 & 263 General Chem. and Lab (4+1)	X		X	X	C- or better in CH 232/262
BI 211 Principles of Biology (4)	X			X	C- or better required in BI 211
BI 212 Principles of Biology (4)		X		X	CH 231/261 or 121; C- or better required in BI 212
BI 213 Principles of Biology (4)			X	X	CH 231/261 or 121; C- or better required in BI 213
CH 331 Organic Chemistry (4)	X	X		X	C- in CH 233/263
CH 332 Organic Chemistry (4)		X	X	X	C - in CH 331
CH 337 Organic Chemistry Lab (4)	X		X	X	CH 332
BB 314 Cell and Molecular Biology (4)	X	X	X	X	C- in BI 211, 212, 213; CH 331 pre\coreq
BB 450 General Biochemistry (4)	X	X		X	CH 332; BB 314 recommended
BB 451 General Biochemistry (3)		X	X	X?	BB 450
ST 351 Introduction to Statistical Methods (4)	X	X	X	X	MTH 111
ST 352 Introduction to Statistical Methods (4)	X	X	X	X	ST 351
OR ST 411 AND ST 412 Methods of Data Analysis (4+4)	X	X	X	X	ST 351; 41x courses required instead of 352 for some options
BI 311 Genetics (4)	X	X	X	X	C- in BI 211, 212, 213
BI 370 Ecology (3)	X	X	X		C- in BI 211, 212, 213
MB 302 General Microbiology & 303 Lab (3+2)	X	X	X	X	CH 332 AND BI 212 and 213; BB 314 recommended
BI 445 Evolution (3)	X	X	X		BI 311
BI 498 Senior Biology Major Field Test - 2 hour exam taken FINAL TERM or spring if graduating summer term					
Biology Elective Areas - Declaring an option may alter these categories - see options for details					
Physics/Computer Science and Quantitative Applications (complete one track below)					
Track I Physics (complete the physics series)					
PH 201 General Physics (5)	X			X	MTH 112 or higher
PH 202 General Physics (5)		X		X	MTH 112 or higher
PH 203 General Physics (5)			X	X	MTH 112 or higher
Track II Computer Science and Quantitative Applications (complete the CS series and two additional courses)					
CS 161 Introduction to Computer Science I (4)	X		X	X	MTH 112
CS 162 Introduction to Computer Science II (4)	X	X		X	C in CS 161
Complete two of the courses below to complete track II (computer science and quantitative applications)					
BB 485 Applied Bioinformatics (3)	X				C- in BB 314, *see catalog
BI 456 Phylogenetics (4)		*			ST 352 or 411 and BI 311 or BI 445, *alternate winter terms
BI 483 Population Biology (3)		X			MTH 251 or 227, ST 352 and BI 311 or BI 370
BOT 458 Ecosystem Genomics (3)			*		BI 311, BB 314, *see catalog
BOT 460 Functional Genomics (3)			X		C- in BI 311 and C- in BI/BB 314
BOT 475 Comparative Genomics (4)		*			BI 311 and BB 314, *alternate winter terms
BOT 476 Introduction to Computing in the Life Sciences (3)				X	BI 311, BB 314
GEOG 360 GIScience I: GIS Information Systems & Theory (4)	*	*	*		*see catalog
GEOG 361 GIScience II: Analysis and Applications (4)		*	*	*	GEOG 360, MTH 112, ST 351, see catalog
OC 449 Ecol. Theories in Biol. and Fisheries Oceanography (4)			X		C in MTH 228 or 252, C in ST 351, C in BI 370 *see catalog
ST 431 Sampling Methods (3)	X				ST 411
ST 435 Quantitative Ecology (3)					ST 412, *see catalog
Biology and Society (take 1 of the following or see option)					
AEC 351 Natural Resource Economics & Policy (3)	*	*	*	*	* See Catalog, bacc. core synthesis- contemporary global issues
AEC 352 Environmental Economics & Policy (3)	*	*	*	*	* See Catalog, bacc. core synthesis- contemporary global issues
BB 331 Introduction to Molecular Biology (3)			X		bacc core. synthesis- science, tech. and society
BB 332 Molecular Medicine (3)	X				bacc core. synthesis- science, tech. and society
BI 175 Genomes, Identities and Society (3)		X			bacc. core- difference, power and discrimination
BI 301 Human Impacts on Ecosystems (3)		X			bacc. core synthesis- contemporary global issues
BI 345 Introduction to Evolution (3)	X		X	X	bacc core. synthesis- science, tech. and society
BI 347 Oceans in Peril (3)		X			BI 150, 211 or 213
BI 348 Human Ecology (3)		?			bacc core. synthesis- science, tech. and society
BI 420 Viruses in Modern Society (3)		*			*Alternate winter terms in odd years, bacc core. synth- science, tech. and soc.
BOT 324 Fungi in Society (3)	X	X	X		bacc core. synthesis- science, tech. and society
FES/TOX 435 Genes, Chemicals in Agriculture (3)	*	*	*	*	* See Catalog, bacc core. synthesis- science, tech. and society
FW 350 Endangered Species, Society and Sustainability (3)	*	*	*	*	* See Catalog, bacc core. synthesis- science, tech. and society
H 312 HIV/AIDS and STIS in Society (3)	*	*	*	*	* See Catalog, bacc. core synthesis- contemporary global issues
HSTS 416 History of Medicine Pre-1800 (4)	*	*	*	X	* See Catalog, bacc core. synthesis- science, tech. and society

Biology and Society (continued from previous page)	F	W	SP	SU	Pre(Co)Requisites / Comments
MB 330 Disease and Society (3)		X			bacc. core, difference, power and discrimination
PHL/REL 443 World Views & Environmental Values (3)	*	*	*	*	* See Catalog, bacc core. synthesis– contemporary global issues
Z 349 Biodiversity: Causes, Consequences & Conservation (3)	X	X			bacc core. synthesis– contemporary global issues
Organismal Biology (take 1 of the following or see option)					
BOT 313 Plant Structure (4)		X			C- in BI 211, 212, 213
BOT 321 Plant Systematics (4)			X		C- in BI 211, 212, 213
BOT 416 Aquatic Botany (4)	X				C- in BI 211, 212, 213
BOT 461 Introduction to Mycology (4)	X				C- in BI 211, 212, 213
Z 361 Invertebrate Biology AND Z 362 Lab (3+2)			X		C- in BI 211, 212, 213
Z 365 Biology of Insects (4)			*		C- in BI 211, 212, 213; * taught alternate years
Z 371 Vertebrate Biology AND Z 372 Lab (3+2)	X				C- in BI 211, 212, 213
Z 422 Comparative/Functional Vertebrate Anatomy (5)	X				C- in BI 211, 212, 213
Z 461 Marine & Estuarine Invertebrates (4)			*		C- in BI 211, 212, 213; taught at Hatfield Marine Sci. Center
Z 477 Aquatic Entomology (4)		X			C- in BI 211, 212, 213, junior standing
Physiology (take 1 of the following or see option)					
BOT 331 Plant Physiology (4)		X			BI 211, 212, 213, CH 231/ 261 or CH 123
BOT 332 Laboratory Techniques in Plant Biol. (3)			X		BOT 331 or BB 314
BOT 488 Environmental Physiology of Plants (3)		X			BI 370 or a plant physiology course
Z 423 Environmental Physiology (3)	X				C- in BI 211, 212, 213; CH 231/261 or 123
Z 425 Embryology & Development (5)	X				BI 311 and BB 314, junior standing
Z 431 Vertebrate Physiology (3)		X			C- in BI 211, 212, 213 and CH 332 pre/coreq
Z 440 Insect Physiology (3)	X				C- in BI 211, 212, 213, CH 123 or CH 233/263
Writing Intensive Course (WIC) (select one of the following or see option)					
BI 317 Scientific Theory and Practice (4)	X	X	X		BI 211, 212, 213 (C-)
BI 306H Environmental Ecology (3)	*	*	*	*	* See Catalog, BI 211, 212, 213 (C-), 233/263
BI 319 Critical Thinking & Communication in the Life Sci. (3)	X	X	X		BI 211, 212, 213 (C-), ST 351
BI 371 Ecological Methods (3)			X		BI 370
BI 373 Field Methods in Marine Ecology (3)			X		BI 370 or BI 351
BOT 323 Flowering Plants of the World (3)		X			* See Catalog; BI 211, 212, 213
MB 385 Emerging Infectious Diseases & Epidemics (3)		X			* See Catalog
Additional Upper Division Science Electives (complete an option or 2 of the 3 tracks below)					
Track I: Integrative Biology Course (select one course)					
BI 353 Pacific Northwest Coastal Ecosystems (4)				*	*Taught at Hatfield
BI 358 Symbiosis and the Environment (3)		*			* See Catalog, alternate odd years; C- CH 233/263 & BI 21x
BI 375 Field Methods in Ecological Restoration (4)				*	*Taught in and around Cascades campus (Bend)
BI 427 Paleobiology (4)			X		C- in BI 211, 212, 213
BI 456 Phylogenetics (4)			*		* See Catalog, alternate odd years; ST 352; BI 311
BI 481 Biogeography (3)			*		* See Catalog, alternate odd years; BI 370
BI 483 Population Biology (3)		X			ST 352, MTH 251 and BI 311 or BI 370
BI 495 Disease Ecology (3)		*			* See Catalog, alternate years
MB 480 General Parasitology (3)		X			BI 311 and BB 314
Z 350 Animal Behavior (3)		X			C- in BI 211, 212, 213
Z 361 Invertebrate Biology AND Z 362 Lab (3+2)			X		C- in BI 211, 212, 213; cannot be counted above
Z 371 Vertebrate Biology AND Z 372 Lab (3+2)	X				C- in BI 211, 212, 213; cannot be counted above
Z 425 Embryology and Development (5)	X				BI 311 and BB 314; cannot be counted above
Z 437 Vertebrate Endocrinology (4)			*		* See Catalog, alternate odd years; BI 314
Z 438 Behavioral Neurobiology (3)			X		C- in BI 211, 212, 213 and CH 233/263
Z 461 Marine and Estuarine Invertebrate Zoology (4)				X	Taught at Hatfield campus, Newport; C- in BI 211, 212, 213
Z 475 Insect Biodiversity Survey (4)	*				*Field work starts before fall; see Catalog, alternate years
Track II: Experiential Learning (complete any combination of 3 credits of the following):					
BI 309 Teaching Practicum– dept. approval (1-3)				BI 401 Research and Scholarship- dept. approval (1-3)	
BI 406 Projects: Curatorial Assistant- dept. approval (1-3)				BI 409 Advanced Teaching Practicum- dept. approval (1-3)	
BI 410 Internship- dept. approval (1-3)				Study Abroad– requires approval before participation	
Track III: Complete an Additional 3+ credit, upper division (300-400 level) science elective courses not used above:					
Courses from BB, BI, BOT, CH, MB, MTH, PH, ST, & Z including double major, minor and Bacc. Core Synthesis may be used. Some courses outside of COS and courses and internships completed internationally may be used by Biology Lead Advisor approval. Excluded: 401-410 except as outlined above or by approval; BB 350, BB 490-492, BI 331-333/341-343, CH 334-336, ST 314, Z 361/362, Z 461 and any 399 or 499 course not specifically approved.					

OSU GRADUATION REQUIREMENTS

File for graduation with the Registrar three terms ahead and review your MyDegrees online checklist with an advisor
Complete the BI 498 Biology Major Field Test your final term or during spring term if planning to graduate in summer
Complete 180 total credits (major and Bacc. Core courses do not total 180) and 60 upper division credits (300-400 level)
No more than 11 PAC, 12 MUP, 15 ALS, 16 BI 309, 406 & 409 credits can be used to reach the required 180 credits
Maintain a 2.0 average GPA for your degree AND major unless otherwise required for your option-- see MyDegrees for these numbers