

Courses are subject to change, check online catalog for updated class schedule. FW Core Courses may double count with Bacc. Core.

BACCALAUREATE CORE: with the exception of Speech and WIC, this section is only required for students earning their first degree.			
Writing I, Speech & Math 111 must be completed within the first 45 OSU credit hours & Writing II within the first 90 OSU credit hours.			
Transfer students must complete Writing II & Speech within first 45 OSU credit hours.			
Perspective Course (LA, CD, SPI, WC): no more than two courses from one Department	Met within FW Degree	Math (MTH 111 or higher)	Fitness HHS 231 & 241 -or- PAC
	Met within FW Degree	WR 1, WR 2, WIC & Speech	Synthesis Courses (CGI, STS): cannot be from the same Department
	Met within FW Degree	Physical Science	Contemporary Global Issues (CGI)
	Met within FW Degree	Biological Science	Science, Tech. and Society (STS)
	Met within FW Degree	Additional Physical Or Biological Science	
Literature & Arts (LA)	Met within FW Degree	Diff., Power & Discrimination (DPD)	CREDITS
Cultural Diversity (CD)	Met within FW Degree		49
Social Processes & Institutions (SPI)	Met within FW Degree		
Western Culture (WC)	Met within FW Degree		

COMMUNICATIONS (all required)		CREDITS		CREDIT
WR I: WR 121 English Composition*		3	Select one WR II:	WR 222 English Composition* -or-
Speech: COMM 111* -or- COMM 114* -or- COMM 211*		3		WR 327 Technical Writing* -or-
Writing Intensive Course (WIC)^ (select one):				WR 362 Science Writing* -or-
FW 435, 439, FW 454, FW 497; can double count with other requirements		3		HC 199 Honors Writing*
			CREDITS	12-13

FISHERIES AND WILDLIFE SCIENCES CORE (all required)				
Select One:	MTH 227 Calculus & Prob. for Life Sciences* -or-	4	ST 351 Intro to Statistical Methods I	4
	MTH 241 Calculus for Mgmt.* -or-	4	ST 352 Intro to Statistical Methods II	4
	MTH 245 Math for Mgmt., Life & SS* -or-	4	FW 107 Orientation to Fisheries and Wildlife	1
	MTH 251 Differential Calculus*	4	FW 209 Career Skills in Fisheries and Wildlife Sciences	1
Complete Series:	CH 121 General Chemistry I*	5	FW 251 Principles of F&W Conservation	3
	CH 122 General Chemistry II*	5	FW 255 Field Sampling of Fish and Wildlife	3
	CH 123 General Chemistry III*	5	FW 289 Communication Skills for F & W Professionals	4
For on campus students CH 231-233 with Corvallis campus labs 261-263 may be substituted for CH 121-123.			FW 307 Specialization Development	1
Complete Series:	BI 211 Principles of Biology I*	4	FW 320 Intro. Population Dynamics (Prereq: BI 370)	4
	BI 212 Principles of Biology II*	4	FW 321 App. Comm. & Ecosystem Eco. (Prereq: FW 320)	3
	BI 213 Principles of Biology III*	4	FW 410 Internship: Exploratory	1
Ecampus students may substitute the BI 204, 205, 206 series for BI 211, 212, 213.			FW 410 Internship: Intensive	3
	BI 370 Ecology (prereqs: BI 211-213)	3	FW 488 Problem Solving in F & W	3
			CREDITS	69

VERTEBRATE BIOLOGY CORE (select one)		SYSTEMATICS CORE (select one)	
FW 311 Ornithology	3	FW 312 Systematics of Birds	2
FW 315 Ichthyology	3	FW 316 Systematics of Fish	3
FW 317 Mammalogy	3	FW 318 Systematics of Mammals	2
FW 331 Ecology of Marine and Estuarine Birds	4	Z 474 Systematic Herpetology	2
BI/FW 302 Bio. & Conservation of Marine Mammals	4		
Z 473 Herpetology	3		
Select one additional course from Vertebrate or Systematics column (2 or 3 or 4 credits)		CREDITS	7 - 11

ADVANCED FISHERIES AND WILDLIFE SCIENCES CORE (select six, one from each category, plus one additional)					
Genetics and Evolution		Species Conservation Management		Botany (may sub FW 434 or 479 with advisor approval)	
ANS 378 Animal Genetics (4)		FW 419 The Natural Hist. of Whales & Whaling (3)		BOT 313 Plant Structure (4)	
BI 311 Genetics (4)		FW/BI 421 Aquatic Biological Invasions (4)		BOT 321 Plant Systematics (4)	
BI 345 Introduction to Evolution* (STS) (3)		FW 427 Principles of Wildlife Diseases (4)		BOT 323 Flowering Plants of the World^ (3)	
FW 370 Conservation Genetics (4)		FW 451 Avian Conservation & Management (3)		BOT 331 Plant Physiology (4)	
PBG 430 Plant Genetics (3)		FW 454 Fishery Biology^ (4)		BOT 341 Plant Ecology (4)	
Credit hours per course are listed after course names in parentheses		FW 458 Mammal Conservation & Management (4)		BOT 416 Aquatic Botany (4)	
		FW 464 Marine Conservation Biology (3)		BOT 440 Field Methods in Plant Ecology (4)	
		FW 465 Marine Fisheries (4)		BOT 442 Plant Population Ecology (3)	
		FW 473 Fish Ecology (4)		BOT 488 Environmental Physiology of Plants (3)	
		FW 481 Wildlife Ecology (3)		RNG 353 Wildland Plant Identification (4)	
1.)		FW/MB 491 Fish Diseases in Cons. Bio. & Aqua. (3)		1.)	
CREDITS	3 - 5	CREDITS	3 - 4	CREDITS	3 - 4

ADVANCED FISHERIES AND WILDLIFE SCIENCES CORE (cont..)					
Habitats and Ecosystems			Behavior and Physiology		
BI 351 Marine Ecology (3)			ANS 311 Principles of Animal Nutrition (3)		
FES 341 Forest Ecology (3)			ANS 314 Animal Physiology (4)		
FES 342 Forest Types of the Northwest (3)			FW 469 Methods in Phys. & Beh. Of Marine Megafauna (3)		
FES 440 Wildland Fire Ecology (3)			FW 471 Environmental Physiology of Fishes (4)		
FW 345 Global Change Biology* (CGI) (3)			FW 474 Early Life History of Fishes (4)		
FW 426 Coastal Ecology and Resource Mgmt. (5) (can sub. for 488)			FW 475 Wildlife Behavior (4)		
FW/OC 434 Estuarine Ecology (4)			FW 476 Fish Physiology (4)		
FW 435 Wildlife in Agricultural Ecosystems^ (3)			Z 350 Animal Behavior (3)		
FW/FES 445 Ecological Restoration (4)			Z 423 Environmental Physiology (3)		
FW/FES 452 Biodiversity Conservation of Managed Forests (3)			Z 431 Vertebrate Physiology (4)		
FW 456 Freshwater Ecology and Conservation (5)			Z 432 Vertebrate Physiology (4)		
FW 462 Ecosystem Services (3)					
FW 467 Antarctic Science and Conservation (4)					
FW 479 Wetlands & Riparian Ecology (prereq: BI 370) (3)			Credit hours per course are listed after course names in parentheses		
RNG 341 Rangeland Ecology and Management (3)					
1.)	CREDITS	3 - 5	1.)	CREDITS	3 - 4
Choose one additional course from a category in the Advanced F & W Sciences Core sections				CREDITS	3 - 5

PHYSICAL and EARTH SCIENCES Select three courses from the two categories below; no more than two courses from any single category. Cannot double count with FW Core. (CGI) & (STS) courses can double count with Baccalaureate Core, but cannot be from same Department.				
EARTH SCIENCES		PHYSICS, MATH, & CHEMISTRY		
ATS 201 Climate Science* (4)	CH 130 Gen. Chem. Of Living Systems (4)	PH 201 General Physics I* (5)		
GEO 201 Physical Geology* (4)	CH 331 Organic Chemistry (4)	PH 202 General Physics II* (5)		
GEO 202 Earth System Science* (4)	CH 332 Organic Chemistry (4)	PH 205 Solar System Astronomy* (4)		
GEO 203 Evolution of Planet Earth* (4)	CH 390 Environmental Chemistry (3)	PH 206 Stars and Stellar Evolution* (4)		
GEO 221 Environmental Geology* (4)	MTH 227 Calc. & Prob. For Life Sci. I* (4)	PH 207 Galaxies, Quasars, and Cosmology* (4)		
GEO 305 Liv. w/ Active Casc. Volcanoes* (STS) (3)	MTH 228 Calc. & Prob. For Life Sci. II (4)	PH 211 General Physics with Calculus I* (4)		
GEO 306 Minerals, Energy, Water, & Envrmt.* (STS) (3)	MTH 241 Calculus for Mgmt. & Soc. Sci.* (4)	PH 212 General Physics with Calculus II* (4)		
GEO 307 Nat'l Park Geo. And Preservation* (STS) (3)	MTH 251 Differential Calculus* (4)	PH 331 Sound, Hearing, and Music* (STS) (3)		
GEO 308 Global Change and Earth Sciences* (CGI) (3)	MTH 252 Integral Calculus (4)	PH 332 Light, Vision, and Color* (STS) (3)		
OC 201 Oceanography* (4)	OC 450 Chemical Oceanography (3)			
OC 332 Coastal Oceanography (3)	1.)			
SOIL/CSS 205 Soil Science* (4)	2.)			
Credit hours per course are listed after course names in parentheses	3.)		CREDITS	9-14

HUMAN DIMENSIONS Select one course from each category below. (CGI), (STS), (WC), (SPI) & (DPD) courses can double count as Baccalaureate Core. (CGI) & (STS) courses cannot be from the same Department.				
Difference, Power, and Discrimination (select one)				
AG 301 Ecosystem Science of Pac. NW Indians* (DPD) (3)	GEO 309 Environmental Justice* (DPD) (3)			
FW 340 Multicultural Perspectives in Natural Resources* (DPD) (3)	1.)	CREDITS	3	
Environmental Law, Policy and Economics (select one)				
AEC 250 Introduction to Environmental Economics and Policy* (SPI) (3)	FW 350 Endangered Species/Society/Sustainability* (STS) (3)			
AEC 253 Environmental Law, Policy and Economics* (WC) (3)	FW 415 Fisheries and Wildlife Law and Policy (3)			
AEC 351 Natural Resource Economics & Policy* (CGI) (3)	FW 422 Introduction to Ocean Law (3)			
AEC/ECON 352 Environmental Economics & Policy (CGI) (3)	PS 475 Environmental Politics and Policy (4)			
AEC 432 Environmental Law (4)	PS 477 International Environmental Politics and Policy			
FOR 462 Natural Resource Policy and Law (3)	1.)	CREDITS	3-4	
Other (select one)				
ANTH 477 Ecological Anthropology	GEOG 340 Introduction to Water Science and Policy* (STS) (3)			
ANTH 481 Natural Resources & Community Values* (STS) (3)	HST 481 Environmental History of the U.S.* (STS) (3)			
BOT 322 Economic and Ethnobotany: Role of Plants in Human Culture (3)	PHL 440 Environmental Ethics (3)			
FES 355 Management for Multiple Resource Values (3)	PHL/REL 443 World Views and Environmental Values* (CGI) (3)			
FES 422 Research Methods in Social Science (3)	PS 461 Environmental Political Theory			
FES 485 Consensus and Natural Resources* (STS) (3)	PS 476 Science and Politics* (STS) (4)			
FW 324 Food from the Sea* (CGI) (3)	SOC 480 Environmental Sociology* (CGI) (4)			
FW 325 Global Crises in Resource Ecology* (CGI) (3)	SOC 481 Society and Natural Resources* (STS) (4)			
FW 360 Origins of F & W Management- Evolution, Genetics & Ecology* (STS) (3)	TRAL 354 Communities, Natural Areas, and Sustainable Tourism (3)			
FW 439 Human Dimensions of Fisheries and Wildlife Management^ (3)	TRAL 493 Environmental Interpretation (4)			
	1.)	CREDITS	3-4	

Specialization (see text for details)	24
Electives	0-20

MATH/CHEMISTRY/BIOLOGY SEQUENCE

For the Fisheries and Wildlife Sciences major, the recommended order for these subjects is Math-Chemistry-Biology.

- If it has been more than one year since you took a math class, and you have not met the 200-level math requirement in the Fisheries and Wildlife Sciences degree program, you will need to take the [ALEKS math placement test](#). It is HIGHLY recommended your math level is at the college algebra (MTH 111) level or higher before taking CH 121 (the first course of the general chemistry series). CH 121 has a C-requirement to get into the next course in the series, [CH 122](#).
- CH 121 is a pre or co-requisite for BI 205 and BI 206 (online) and BI 212 and BI 213 (on campus).
- The online biology series (BI 204, 205, 206) is intended for Ecampus students; courses in this series cannot be substituted with courses from the BI 211-212-213 series.
- BI 204, 205, and 206 are not sequential (e. g. the courses may be taken in any order).
- The online biology series does not satisfy the prerequisite for the following courses in the Fisheries and Wildlife curriculum: Z 422, Z 431, and Z 432. Furthermore, this series may not be appropriate for careers in Veterinary, Dental, or Medical Sciences or any degrees offered through the OSU College of Science, please consult with your advisor before enrolling in the series.

PROFESSIONAL DEVELOPMENT SERIES

FW 107 ORIENTATION TO FISHERIES AND WILDLIFE SCIENCES (1 credit)

FW 107 Orientation to FW Sciences introduces students to a range of academic and career pathways in fisheries and wildlife sciences.

FW 209 CAREER SKILLS IN FISHERIES AND WILDLIFE SCIENCES (1 credit)

FW209 - Career Skills in Fisheries and Wildlife Sciences offers a foundation for life-long career development by helping students understand the job market in fisheries and wildlife and learn how to evaluate and choose potential career- building opportunities. Students will learn how to identify potential internship opportunities and prepare for them by learning how to build a resume, how to write effective cover letters, and gaining the skills necessary for networking and interviewing. This course is intended for students that have completed FW107, FW 251, the general chemistry series, and have at least sophomore standing. It is recommended that FW 209 be done prior to FW 410 Internships, but exceptions may be possible.

FW 307 SPECIALIZATION DEVELOPMENT (1 credit)

FW307 Specialization Development helps students develop an additional set of classes called the "Specialization" that are focused on the student's career interests, along with advanced career planning, such as considering graduate school. Students should consult with their advisor before taking this class. Students generally take this course their junior year or after completing the chemistry and biology sequences. Students work with the course instructor and their advisor to finalize the courses within their Specialization.

SPECIALIZATION COURSE REQUIREMENTS (24 credit minimum)

The Specialization, intended to supplement the Advanced Fisheries and Wildlife Core, must contain a minimum of 24 credits. At least 20 credits will be from upper division (300 and 400 level) courses; no more than four lower division credits are allowed. A maximum of two courses may be completed prior to approval of the Specialization, additional upper division credits may be allowed through petition to advisor. With the exception of Writing Intensive Courses (WIC), double counting (when credit is given twice for a course), is not permitted between the Specialization and other University or Departmental course work. For students completing their first BS degree, 12 credit hours applied towards their minor may also be applied towards the Specialization (requires approval by Advisor in Minor Department and FW Advisor). A maximum of 12 credit hours, in any

combination, of FW 401 Research and FW 410 International Internship can be used towards the specialization. Post Baccalaureate students who are completing their second degree may use a maximum of 12 credits from their first degree towards their specialization (approved by FW Advisor).

FW 410 INTERNSHIPS (4 credits minimum)

Internship Coordinator: Danielle Jarkowsky, Danielle.Jarkowsky@oregonstate.edu, Nash 104E

There are two types of internships: Exploratory (1-2 credits) and Intensive (3-6) credits. Students are required to complete a minimum of two internships or other approved alternative experiences (one of each type) for their degree. Students are encouraged to start gaining professional experience by volunteering or interning with a natural resource agency no later than their junior year. It is recommended that both internships are completed at least two terms prior to graduation and need not be sequential.

- The **Exploratory Internship** helps students explore career directions. It involves a professional experience with at least 40 hours of learning time off campus in a natural resource setting. Most students attend a professional conference, such as the Annual Conference of The Wildlife Society or American Fisheries Society, or assist a professional biologist with field work.
- The **Intensive Internship** helps students experience work as a professional and gain technical skills that complement the academic/conceptual knowledge learned in classes. It involves a professional experience in an off-campus natural resource organization for a long enough time period and with enough depth and breadth to gain competence in one or more facets of a position or organization. This experience often leads to the student performing professional duties independent of supervision.
- Students need to register for the FW 410 internship class for the term in which their internship occurs (even if it is summer term). **Before registering, students must have their internship approved by the FW Internship Coordinator.** The Internship Coordinator is responsible for guiding students, providing general oversight, and final evaluation of the internship/experience requirement. Before beginning the internship, a formal letter of understanding between the student, department, and mentor in the natural resource profession must be submitted by the student.
- At the conclusion of the experience the student will complete the course by meeting the requirements listed on the FW 410 class syllabus, including submission of a resume and brief report describing the activities and what was learned. Mentors may provide a brief evaluation of the student's education.
- For students that consider themselves non-traditional students, most often Ecampus students that are concerned with fitting the internships into their schedule, read this supplemental information on our [website](#).

CAPSTONE COURSE FW 488 PROBLEM SOLVING IN FISHERIES & WILDLIFE SCIENCE (3 credits)

Students participate in the capstone experience through FW 488 Problem Solving in Fisheries & Wildlife Science. This course is taken after a student has reached at least senior standing and is as close to the end of their degree requirements as possible. Students are required to complete FW 320 & FW 321 and are recommended to have taken one or more 400 level FW classes before they begin the capstone course. The capstone course is designed to introduce students to the synthesis of scientific information on species, habitats and ecosystems and the use of such data in shaping fisheries and wildlife conservation, management, and policy. It includes a group problem solving project and case studies.