

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

<b>BACCALAUREATE CORE: with the exception of Speech and WIC, this section is only required for students earning their first degree.</b>			
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
Literature & Arts (LA)	Met within FW Degree	WR 1, WR 2,WIC & Speech	Synthesis Courses (CGI, STS): cannot be from the same Department
Cultural Diversity (CD)	Met within FW Degree	Physical Science	Contemporary Global Issues (CGI)
Social Processes & Institutions (SPI)	Met within FW Degree	Additional Physical Or Biological Science	Science, Tech. and Society (STS)
Western Culture (WC)	Met within FW Degree	Diff., Power & Discrimination (DPD)	<b>CREDITS</b> <b>49</b>

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

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

<b>VERTEBRATE BIOLOGY CORE (select one)</b>		<b>SYSTEMATICS CORE (select one)</b>			
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				
<b>Select one additional course from Vertebrate or Systematics column (2 or 3 or 4 credits)</b>					
				<b>CREDITS</b>	<b>7 - 11</b>

<b>ADVANCED FISHERIES AND WILDLIFE SCIENCES CORE (select six, one from each category, plus one additional)</b>					
<b>Genetics and Evolution</b>		<b>Species Conservation Management</b>		<b>Botany (may sub FW 434 or 479 with advisor approval)</b>	
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.) _____	
<b>CREDITS</b>		<b>CREDITS</b>		<b>CREDITS</b>	
<b>3 - 5</b>		<b>3 - 4</b>		<b>3 - 4</b>	

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 426 Coastal Ecology and Resource Mgmt. (5) (can sub. for 488)		FW 474 Early Life History of Fishes (4)		
FW/OC 434 Estuarine Ecology (4)		FW 475 Wildlife Behavior (4)		
FW 435 Wildlife in Agricultural Ecosystems^ (3)		FW 476 Fish Physiology (4)		
FW/FES 445 Ecological Restoration (4)		Z 350 Animal Behavior (3)		
FW/FES 452 Biodiversity Conservation of Managed Forests (3)		Z 423 Environmental Physiology (3)		
FW 456 Limnology (5)		Z 431 Vertebrate Physiology (4)		
FW 462 Ecosystem Services (3)		Z 432 Vertebrate Physiology (4)		
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
<b>PHYSICAL and EARTH SCIENCES</b> 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.				
<b>EARTH SCIENCES</b>		<b>PHYSICS, MATH, &amp; CHEMISTRY</b>		
ATS 210 Intro. to the Atmospheric Sciences (3)		CH 130 Gen. Chem. Of Living Systems (4)	PH 202 General Physics II* (5)	
GEO 201 Physical Geology* (4)		CH 331 Organic Chemistry (4)	PH 205 Solar System Astronomy* (4)	
GEO 202 Earth System Science* (4)		CH 332 Organic Chemistry (4)	PH 206 Stars and Stellar Evolution* (4)	
GEO 203 Evolution of Planet Earth* (4)		CH 390 Environmental Chemistry (3)	PH 207 Galaxies, Quasars, and Cosmology* (4)	
GEO 221 Environmental Geology* (4)		MTH 241 Calculus for Mgmt. & Soc. Sci.* (4)	PH 211 General Physics with Calculus I* (4)	
GEO 305 Liv. w/ Active Casc. Volcanoes* (STS) (3)		MTH 251 Differential Calculus* (4)	PH 212 General Physics with Calculus II* (4)	
GEO 306 Minerals, Energy, Water, & Envrmt.* (STS) (3)		MTH 252 Integral Calculus (4)	PH 331 Sound, Hearing, and Music* (STS) (3)	
GEO 307 Nat'l Park Geo. And Preservation* (STS) (3)		OC 450 Chemical Oceanography (3)	PH 332 Light, Vision, and Color* (STS) (3)	
GEO 308 Global Change and Earth Sciences* (CGI) (3)		PH 201 General Physics I* (5)		
OC 201 Oceanography* (4)				
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
<b>HUMAN DIMENSIONS</b> 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.				
<b>Difference, Power, and Discrimination (select one)</b>				
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
<b>Environmental Law, Policy and Economics (select one)</b>				
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
<b>Other (select one)</b>				
ANTH 477 Ecological Anthropology		FW 439 Human Dimensions of Fisheries and Wildlife Management^ (3)		
ANTH 481 Natural Resources & Community Values* (STS) (3)		FW 360 Origins of F & W Management- Evolution, Genetics & Ecology* (STS) (3)		
BOT 322 Economic and Ethnobotany: Role of Plants in Human Culture (3)		GEOG 340 Introduction to Water Science and Policy* (STS) (3)		
FES 354 Communities, natural Areas, and Sustainable Tourism (3)		HST 481 Environmental History of the U.S.* (STS) (3)		
FES 355 Management for Multiple Resource Values (3)		PHL 440 Environmental Ethics (3)		
FES 360 Collaboration and Conflict Management (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)		
FES 493 Environmental Interpretation (4)		SOC 480 Environmental Sociology* (CGI) (4)		
FW 324 Food from the Sea* (CGI) (3)		SOC 481 Society and Natural Resources* (STS) (4)		
FW 325 Global Crises in Resource Ecology* (CGI) (3)		1.) _____	CREDITS	3-4
<b>Specialization (see text for details)</b>				24
<b>Electives</b>				0-20

## BIOLOGY SERIES

Please note that the BI 204, 205, 206 series is only available to Ecampus students and cannot be mixed with the BI 211-213 series. It does not serve as a prerequisite to the following courses in the Fisheries and Wildlife curriculum: Z 422, Z 431, and Z 432. Also, 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.

### **AREA OF SPECIALIZATION (24 credit minimum)**

To supplement the Advanced Fisheries and Wildlife Core, students develop an additional set of classes, called the "Specialization," that are focused on the student's career interests. The Specialization selection process, along with career development activities, is part of FW 307: Specialization Development. Students generally take this course their junior year after consultation with their advisor. Students work with the course instructor and their advisor to finalize the courses within their Specialization.

Specializations are in addition to Fisheries and Wildlife Core/Advanced Core courses and must contain a minimum of 24 credits. At least 20 credits within a Specialization 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)**

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 as early as possible and no later than their junior year. Both internships should be 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 more information, contact the Internship Coordinator:  
Danielle Jarkowsky, [Danielle.Jarkowsky@oregonstate.edu](mailto:Danielle.Jarkowsky@oregonstate.edu), Nash 104E

### **FW 488 CAPSTONE COURSE 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.

#### **FW 488 Problem Solving in Fisheries & Wildlife Science (3 credits)**

This course focuses on three activities: 1) a review of several case histories on current, "real world" conservation and management problems presented by faculty or agency biologists who have worked on each problem; 2) discussion about the process used to logically address complex problems in fish and wildlife conservation, and; 3) independent work by students in small groups on a selected topic of their choice. The group project provides an opportunity for students to apply what they have learned in this and previous courses to address a conservation or management issue of interest. Projects include data analysis and/or synthesis, literature review, and/or evaluation of the social and economic systems involved in the controversy or management problem.