

2008-2009
Bachelor of Science in Fisheries and Wildlife Science
Department of Fisheries & Wildlife
College of Agricultural Sciences
Oregon State University

Courses	Terms offered on Campus	Credits
Baccalaureate Core not included in FW Core		33
Perspectives courses - (See FW advising checklist for categories)		24
Communications		9
WR 121: English Composition	F, W, Sp, Su (by last name)	3
COMM 111: Public Speaking	F, W, Sp	3
WR 222: English Composition or	F, W, Sp, Su	3
PHL 121: Reasoning and Writing	F, W, Sp, Su	3
Writing Intensive Course (WIC)	various	3
Fisheries and Wildlife Core		
FW 107: Orientation to Fisheries and Wildlife	F	1
FW 307: Specialization Development	W	1
FW 251: Principles of Fish and Wildlife Conservation - **	W	3
FW 255: Field Sampling of Fish and Wildlife	F, W, Sp	3
FW 320: Introductory Population Dynamics	W	4
FW 321: Fisheries and Wildlife Resource **	Sp	3
Biology 211, 212, 213	211: F; 212: W; 213: Sp	12
Chemistry 121, 122, 123	121: F, W; 122: W, Sp; 123: Sp	15
or Chemistry 221, 222, 223	221: F, W; 222: W, Sp; 223: Sp	
Math 241: Calculus of Mgt & Soc Sci - **	F, W, Sp, Su	4
or Math 251: Differential Calculus - **	F, W, Sp, Su	
Statistics, ST 351 - **	351: F, W, Su; 352: W, Sp	8
Ecology, BI 370 - **	F, W, Sp	3
Select 3 Additional courses in Chemistry		
Physics, and/or Earth Sciences (from attached list)	various	9 to 12
Select 3 courses in Human Dimensions of		
Natural Resources (from attached list)	various	9 to 12
Select one of the following		
FW 311: Biology of Birds- **	Sp	3
FW 315: Biology of Fish- **	F	3
FW 317: Biology of Mammals - **	W	3
Z 473: Biology of Amphibians and Reptiles	Sp	3
Select one of the following:		
FW 312: Systematics of Birds - **	F	2
FW 316: Systematics of Fish	F	2
FW 318: Systematics of Mammals	W	2
Z 474: Systematic Herpetology	Sp	2
Select one additional course from preceding 2 lists	see above	2 to 3
Select one of the following (System/application courses):		
FW 426: Coastal Ecology and Resource Management	F	5
FW 435: Wildlife in Agricultural **	W	3
FW 446: Wildland Fire Ecology	W	3
FW 453: Forest Management & Wildlife Conservation	Sp	3
FW 454: Fishery Biology	F	5
FW 456: Limnology	Sp	5
FW 458: Management of Big Game Animals	Sp	4
FW 473: Fish Ecology	Sp	4
FW 479: Wetlands and Riparian Ecology - **	alternate years - Sp 10, 12 etc.	3
FW 481: Wildlife Ecology - **	F	3
FW 410: Internship experience (2 required)	throughout year	4 to 6
FW 488 - Problem Solving in Fisheries and Wildlife Sciences	W	3
FW 489 - Effective Communications in Fisheries and Wildlife Science	Sp	3
Subtotal for Fisheries and Wildlife Core		96-106

** = This Course also offered through Ecampus

^ = Writing Intensive Course

Please Note: Classes are subject to change at any time. Be sure to double check course catalog online for updates.

PHYSICS, CHEMISTRY, EARTH SCIENCE

Requirement: Choose three courses from the list below in physics, chemistry, and earth sciences. **No more than two courses can be selected from any single category.**

Goal: To provide students with a background in the basic physical sciences that are important to fish and wildlife science, conservation, and management, to allow students to explore topics of potential interest, and to provide a solid base on which to build a specialization program to match their career goals.

		CREDITS
PHYSICS AND MATH		9-15
PH 201	General Physics I	5
PH 202	General Physics II	5
PH 203	General Physics III	5
PH 205	Solar System Astronomy	4
PH 206	Stars and Stellar Evolution	4
PH 207	Galaxies, Quasars, and Cosmology	4
PH 211	General Physics with Calculus I	4
PH 212	General Physics with Calculus II	4
PH 213	General Physics with Calculus III	4
PH 331	Sound, Hearing, and Music* (STS)	3
PH 332	Light, Vision, and Color* (STS)	3
MTH 252	Integral Calculus	4
FW/MTH 268	Mathematical Ideas in Biology	4
CHEMISTRY		
CH 130	General Chemistry of Living Systems	4
CH 324	Quantitative Analysis	4
CH 331	Organic Chemistry**	4
CH 332	Organic Chemistry**	4
CH 334	Organic Chemistry	4
CH 335	Organic Chemistry	4
CH 336	Organic Chemistry	4
CH 390	Environmental Chemistry	3
BB 350	Elemental Biochemistry**	4
TOX 360	The World of Poisons* (STS)	3
EARTH SCIENCES		
ATS 210	Introduction to the Atmospheric Sciences	3
GEO 201	Physical Geology	4
GEO 202	Earth System Science	4
GEO 203	Evolution of Planet Earth	4
GEO 221	Environmental Geology**	3
GEO 305	Living with Active Cascade Volcanoes* (STS)**	3
GEO 306	Minerals, Energy, Water, and the Environment* (STS)	3
GEO 307	National Park Geology and Preservation* (STS)**	3
GEO 308	Global Change and Earth Sciences* (CGI)**	3
GEO 322	Surface Processes	4
GEO 323	Climatology*^	4
OC 331	Introduction to Oceanography	3
OC 332	Coastal Oceanography	3
CSS 305	Principles of Soil Science	4

Most 400 geology courses would be appropriate, but they have 200 and 300 level prerequisites.

** = Course also offered through E-campus

*= Bacc Core; STS= Science, Technology, & Society; CGI= Contemporary Global Issues; ^= Writing Intensive Course

Human Dimensions Courses

Requirement: Three courses from the following list of Human Dimensions courses.

Goal: To provide students a broad perspective at an advanced level of the interface between humans and the natural resources upon which we depend. This experience is intended to build upon and complement the Baccalaureate Core Perspectives requirement.

Course	Terms offered	Credits
AG 301: Ecosystem Science of Pacific NW Indians* (DPD)	W	3
ANTH 481: Natural Resources and Community Values* (STS)	W, Sp	3
AREC 351: Natural Resource Management* (CGI)	W	3
AREC 352: Environmental Economics and Policy* (STS)	F, Sp	3
AREC 432: Environmental Law	Sp	4
BI 301: Human Impacts on Ecosystems* (CGI)	W	4
FOR 330: Forest Resource Economics	F	4
FOR 351: Recreation Behavior and Management	F	4
FOR 355: Management for Multiple Resource Values	Sp	4
FOR 365: Issues in Natural Resource Conservation* (CGI)	W	3
FOR 432: Economics of Recreation Resources	W	4
FOR 451: Historical Cultural Aspects of Recreation	Check course listing online	4
FOR/FE 456: International Forestry* (CGI)	Sp	3
FOR 460: Forest Policy [^]	W, Sp	4
FOR 462 Natural Resource Policy and Law	F	3
FOR 463 Environmental Policy and Law Interactions	Sp	3
FW 340: Multicultural Perspectives in Natural Resources* (DPD)	Sp	3
FW 350 Endangered Species/Society/Sustainability* (STS)	Sp	3
FW 415/515: Fisheries and Wildlife Law and Policy	Sp	3
FW 470: Ecology and History: Landscapes of the Columbia Basin* (STS)	Distance Education only	3
FW 485: Consensus and Natural Resources* (STS)	Distance Education only	3
GEO 311: 20th Century U.S. Environmental Policy* (CGI)	Check course listing online	3
HST 481: Environmental History of the U.S.* (STS)	Sp	3
HSTS 415: Theory of Evolution and Foundation of Modern Biology* [^] (STS)	F	3
HSTS 425: History of the Life Sciences* [^] (STS)	W	3
PHL 340: Science, Policy, and Society* (STS)	Check course listing online	4
PHL 440: Environmental Ethics	F	3
PHL 443: World Views and Environmental Values* (CGI)	Check course listing online	3
PS 474: Bureaucratic Politics	W	4
PS 475: Environmental Politics and Policy	Check course listing online	4
PS 476: Science and Politics* (STS)	Sp	4
SOC 480: Environmental Sociology* (CGI)	F	3
SOC 481: Society and Natural Resources	W	4
WS 470: Women: Creating Multicultural Alliances	Check course listing online	3

* Also satisfies Bacc Core requirement: CGI= Contemporary Global Issues; STS= Science, Tech, & Society; DPD= Difference, Power, and Discrimination; [^] = Writing Intensive Course

SPECIALIZATION 42-53 credits

Students, in consultation with faculty, refine their career and life goals and develop a plan of study to help them achieve those goals. Specializations should be developed late in their sophomore year or early in their junior year and will be presented to their advisor for review and comment. A one credit, P/N graded course (FW 207) is offered winter and spring term to help students define their professional goals and develop an appropriate academic plan. After review by a student's advisor, specializations are reviewed by the Departmental Resident Instruction Committee. The focus of the review will be on delineation of the goals and how the proposed academic program will help the student achieve those goals. Individual specializations and titles are subject to approval by the Department Head. The following guidelines are provided to assist students in preparing a Specialization.

Specializations must contain 42-53 credits, of which a maximum of 2 courses may be lower division (100, 200 level). Plans must contain at least three, 400 level Fisheries and Wildlife courses. A maximum of 10 credits may be taken before formulation and review of the plan. All courses in the Specialization are in addition to the courses in the Fisheries and Wildlife Core. Specializations may be given titles to reflect their content and can be general or specific.

Specializations that include "Fish", "Fishery" or "Fisheries" in the title should contain at least 12 credits of "aquatic sciences". Ones that include "Wildlife" in the title should have at least 12 credits of "terrestrial sciences". Ones that include "Marine" in the title should include a term of full-time enrollment (at least 12 credits) at a marine field station.

Examples of general specializations in Fishery Science and Wildlife Science are available in the departmental advising office Nash 104E. These examples are intended as guidelines for students to give them suggestions for courses they may want to include in their specialization.

Baccalaureate Core Credits	33
Fisheries and Wildlife Core Credits	95-106
Specialization	minimum 42
TOTAL	minimum 180

180 credits required for graduation

INTERNSHIP/EXPERIENCE REQUIREMENT 4-6 credits

REQUIREMENT: Two experience activities are required for graduation. These will be taken as FW 410, Internship, for 1-3 credits each for a total of 4-6 credits. The student should sign up for the appropriate number of credits the term they plan to complete their internship requirements. All internships must be completed at least two terms before graduation. At least one of the experiences must be “substantial” and valued at 3 credits. The coordinator will determine the credits for each experience based on the activities involved and in consultation with the student and the experience mentor. Internship is a graded class.

GOAL: The goal of this requirement is for students to apply the concepts, principles and skills acquired in the classroom to a professional, “real-world” context. Additionally students will gain an understanding of the structure and function of natural resource organizations. This experience will allow students to recognize their personal strengths and refine their professional goals.

EXPLANATION: We define an experience as an active learning activity that applies classroom knowledge in a “real-world” setting, and involves students with natural resource professionals in management, research, policy making, and education positions. The experience must occur during a student’s tenure at OSU, must not be a part of other credit courses, and must receive prior approval from the faculty coordinator. Experiences will be formalized with a letter of understanding between the student, the department and the mentor overseeing the experience. At the conclusion of the experience the student will complete the course by meeting the class syllabus requirements, including submission of a resume and a brief report describing the activities and what was learned; mentors may provide a brief evaluation of the student’s performance. Credit value will be based upon the contribution of the experience to the student’s education. Generally, major experience will consist of continuing involvement over several months, while minor experiences will be of shorter duration (days). Examples of experiences would include full or part-time employee/volunteer during the summer or academic year in a natural resource related area, participation in professional meetings, and teaching natural resource subjects in school or community forums.

This requirement will be administered by a faculty coordinator who will be responsible for planning, general oversight and final evaluation of the experience requirement. The coordinator will serve as liaison between students and agencies/groups/individuals providing experience activities, and will actively seek out experience opportunities. The coordinator will provide guidance to students to maximize the educational value of the experiences.

Internship Coordinator: Rebecca Goggans, Rebecca.goggans@oregonstate.edu, Nash 104A

CAPSTONE COURSES 6 credits

FW 488. Problem Solving in Fisheries and Wildlife Science (3 credits, Winter term)

Enforced Pre-requisites: FW 320, 321

Recommended pre-requisites: One or more 400-level FW courses, such as FW 481 Wildlife Ecology, FW 454 Fishery Biology, or FW 426 Coastal Ecology and Resource Management

Description: This is the first of a two-course capstone sequence 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. The course will center on three activities: 1) a review of three or four 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, leading to development of 3) independent work by students in small groups on a select topic of their choice. The intent of the case history studies is to provide an in-depth treatment of a “real life” complex issue in natural resource management. Each case study will be presented using a common framework that will provide students with a logical process for addressing complex problems in general, and their group problem specifically. 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. Each student group will work on a project that includes data analysis and/or synthesis, literature review, and evaluation of the social and economic systems that are involved in the controversy or management problem. Project write-up and presentation will be completed in the subsequent companion course, FW 489 Effective Communications in Fisheries and Wildlife Science, offered in Spring term. Students are required to take the two courses sequentially.

This will be a required course in the FW curriculum, offered each Winter term as part of a 2 course sequence that must be taken together (FW 488 (Winter) and FW 489 (Spring)). The course sequence will be restricted to majors with senior status. A distance version of the course will be developed in 2010.

This course and FW 489 Effective Communications in Fisheries and Wildlife Science will replace the three course Group Problem Solving sequence, FW441, 442 and 443.

FW 489: Effective Communications in Fisheries and Wildlife Science (3 credits, Spring term)

Enforced Prerequisites: FW488

Description: This continues the 2 course capstone sequence for FW majors emphasizing the analysis, synthesis and interpretation of information and written and oral communication of management, education or policy statements. The course will be taught spring term every year and in sequence with FW488 that will be taught during winter. We will meet twice per week (80 minutes each session) with a lecture and discussion on the first day each week and Group Project work on the second day to assure designated time for Group Project activities.

In this course, groups will work on a variety of methods for presenting their projects to different audiences. In addition to lectures on how to communicate effectively, we will discuss science and advocacy, the role of science in policy-making, conflict resolution skills for communicating with diverse audiences, and working with the media.