

Fisheries and Aquatic Sciences

Bachelor of Science (A-17H) 133* Credits

The fisheries and aquatic sciences program prepares students for professional careers in fisheries research and management, information and education, and interdisciplinary investigations of environmental problems. Emphasis is on freshwater systems. Graduates receive a Bachelor of Science Degree and meet certification requirements of the American Fisheries Society. This Department of Forestry and Natural Resources Program has a common core requirement with the forestry, natural resources, and wildlife curricula. Sustainable management of natural resource systems -- focusing on forests, watersheds, and associated flora and fauna to meet the needs of society -- is emphasized.

Freshman Year

<i>First Semester</i>	<i>Second Semester</i>
(1) AGR 101 School of Agriculture Orientation	(4) <i>BTNY 210 Introduction to Plant Science</i>
(4) <i>BIOL 110 Fundamentals of Biology I</i>	(3) CHM 112 General Chemistry II
(3) CHM 111 General Chemistry I	(3) COM 114 Fundamentals of Speech Communication
(4) ENGL 106 English Composition	(3) FNR 103 Intro. to Environmental Conservation
(3) <i>MA 223 Introductory Analysis I (calculus)</i>	(3) MA 224 Introductory Analysis II (calculus)
(15)	(16)

Sophomore Year

<i>Third Semester</i>	<i>Fourth Semester</i>
(3) AGECE 217 Economics	(3) AGRY 255 Soil Science or AGRY 270 Forest Soils
(3) FNR 203 Freshwater Ecology	(2) BIOL 286 Introduction to Ecology
(3) FNR 241 Ecology & Systematics of Fishes & Mammals	(3) FNR 210 Natural Resource Information Management
(1) FNR 242 Laboratory in Ecology & Systematics of Fishes & Mammals	(3) FNR 251 Ecology & Systematics of Amphibians, Reptiles & Birds
(3) <i>STAT 301 Elementary Statistical Methods</i>	(1) FNR 252 Laboratory in Ecology & Systematics of Amphibians, Reptiles & Birds
(3) Written or oral communication elective ³	(3) FNR 351 Aquatic Sampling Techniques
(16)	(15)

Summer Session

(Courses in bold are prerequisites for FNR 370 and 371. Courses in italics are prerequisites for emboldened courses.)

(2) FNR 370 Natural Resources Practicum
(4) FNR 371 Fisheries and Aquatic Sciences Practicum
(6)

Junior Year

<i>Fifth Semester</i>	<i>Sixth Semester</i>
(2) Ecotoxicology or wildlife disease elective ⁶	(3) FNR 305 Conservation Genetics
(3) FNR 230 World's Forests & Society	(3) FNR 375 Human Dimensions of Natural Resource Management
(3) FNR 365 Natural Resources Issues, Policy & Administration	(3) FNR 455 Fish Ecology or FNR 453 Fish Physiology
(3) FNR 406 Natural Resource & Environmental Economics	(3) Physical science elective ⁷
(3) FNR 454 Fisheries Science and Management	(3) Unrestricted elective
(3) Social science or humanities elective ^{4,5}	---
(17)	(15)

Senior Year

<i>Seventh Semester</i>	<i>Eighth Semester</i>
(1) FNR 470 Fundamentals of Planning	(3) FNR 408 Ecosystem Management Practice
(3) BTNY 555 Aquatic Botany	(3) FNR 452 Aquaculture
(3) Ethics elective (PHIL 111, 280 or 290)	(3) Social science or humanities elective ^{4,5}
(3) Humanities elective ⁴	(3) Unrestricted elective
(3) Physical science elective ⁷	(3) Unrestricted elective
(3) Unrestricted elective	(2) Unrestricted elective
(16)	(17)

*You must complete nine hours of coursework with an international¹ focus and 3 credits of Multicultural Awareness². These may overlap with elective coursework in the social science or humanities, oral or written communication, unrestricted, or study abroad areas.

¹ **International Understanding electives:** 9 credits of International Understanding electives are required. These credits are not, however, in addition to the total number of hours required, but do restrict the choice among some categories of required courses. FNR 230, required in this major, provides 3 credits; thus, 6 additional credits must be selected from the following courses. For example, a student taking French 101 and 102 could use these courses to cover the requirement for Humanities and the International Understanding.

AGEC 250, 340, 450	ECON 370, 466	HORT 403
AGR 493, 495, 497	ENGL 266, 267	IDIS 381
AGRY 285,350,570	FNR 230, 460, 488	PHIL 330, 331
ANTH 100, 205, 578	HIST 240, 241, 243,245, 271, 272, 290,	POL 130, 141, 232, 235, 237, 290, 303,
BTNY 201	323, 324, 329, 340, 341, 342, 343, 344,	304, 342, 344, 345, 347, 433, 434, 435,
COM 224, 424	345, 439, 441, 472	442, 445, 447

FLL (Arabic, Chinese, French, German, Italian, Japanese, Portuguese, Russian, or Spanish) 101, 103, 102, 201, 202, 480, 581; GER 223; RUSS 289. (*Note: a minimum of six credits of a foreign language must be earned to be utilized as International Understanding electives.*)

² **Multicultural Awareness Requirement and Courses:**

These credits are not, however, in addition to the total number of hours required, but do restrict the choice among some categories of required courses. This requirement may be met by taking AGR 201 Communicating Across Culture, AGR 496 Multicultural Professional Experience, or one of the following courses:

ANTH 303, 379	COM 376, 381	EDCI 285
ENGL 257, 358, 360	HIST 365, 366, 377, 396, 398	HK 226
IDIS 271, 280, 330, 370, 375, 376, 381	PHIL 225, 242, 330	POL 222, 326, 360, 456
PSY 225, 239, 368	SOC 220, 310, 450	SPAN 235, YDAE 385

³ **Written or Oral Communications electives:**

ASL 101,102, COM 200 +, ENGL 200+, or EDCI 440

⁴ **Humanities electives:**

EDST 200

ENGL 201, 227, 230, 231, 232, 235, 237, 238, 239, 240, 241, 250, 257, 262, 264, 266, 267, 276, 279,331, 333, 335, 337, 350, 351, 356, 360, 361, 364, 372, 373, 375, 376, 377, 379, 381, 382, 383, 386, 387, 396, 411, 412, 413, 414, 441, 442, 444, 462, 463, 468, 469, 492.

FLL (Arabic, Chinese, French, German, Italian, Japanese, Portuguese, Russian, or Spanish) 101, 103, 102, 201, 202, 480, 581; GER 223; RUSS 289. (*Note: a minimum of six credits of a foreign language must be earned to be utilized as Humanities electives.*)

Any course in History, Interdisciplinary Studies, Philosophy, and/or Visual and Performing Arts

⁵ **Other Social Sciences electives:**

AGEC 250, 305, 340, 410, 415, 450 (no more than 3 credits allowed in addition to FNR/AGEC 406)

EDPS 235, 265

Any course in Anthropology, Political Sciences, Psychological Sciences, and/or Sociology

⁶ **Ecotoxicology or wildlife disease electives:**

Courses will vary but may include FNR 598 Ecotoxicology, FNR 598 Aquatic Animal Health, or courses currently being developed in FNR and other departments and approved for this elective.

⁷ **Physical Sciences electives:**

Additional courses in the following areas -- chemistry, physics, soils, geology, hydrology, earth science, astronomy, and meteorology.