

FISHERIES CONSERVATION AND MANAGEMENT OPTION (Major: Natural Resources)

This guide is to aid students in selecting courses. Changes may be made but only in consultation with an advisor. Students must meet all program, Natural Resource Core Curriculum, and University general education requirements for graduation. (See SNR Web Site: www.ag.arizona.edu/srn)

| | FALL | | SPRING | |
|----------------|--|--------------|--|--------------|
| Freshman Year | Tier 1 Nat Sci – CHEM 103a, 104a (Gen. Chem & Lab) | 4 | Tier 1 Nat Sci – CHEM 103b, 104b (Gen. Chem & Lab) | 4 |
| | ENGL 101 or 103H (Freshman Composition) | 3 | ENGL 102 or 104H (Freshman Composition) | 3 |
| | Tier 2 Nat Sci – MCB 181R/L (Life Sci. of Bio & Lab) | 4 | ECOL 182 (Life Sci. of Bio & Lab) | 4 |
| | Tier 1 Individuals and Societies Elect. | 3 | MATH 113, 124, or 125 (Calculus) | 3 |
| | Tier 1 Traditions and Cultures Elect. ¹ | 3 | Tier 1 Individuals and Societies Elect. | 3 |
| | TOTAL | 17 | TOTAL | 17 |
| Sophomore Year | Tier 2 Ind & Soc – ECON 201a or Econ 200 (Economics) | 3 | Tier 1 Traditions & Cultures Elect. | 3 |
| | CHEM 241a, 243a or PHYS 102, 181 or SWES 200, 201 | 4 | ENGL 308 (Tech. Writ), SWES 408 (Sci. Writ), AED 422 | 3 |
| | MATH 160 or 263 (Statistics) | 3 | COMM 119 (Public Speaking) ² or Technical Elect. ³ | 3 |
| | RNR 200 (Foundations in History & Policy) | 3 | RNR 271 (Natural Resources – Computer Applications) | 3 |
| | RNR 202 (Nat. Resources – Native Plant Taxonomy) | 3 | RNR 321 (Natural Resources – Measurements) | 3 |
| | TOTAL | 16 | TOTAL | 15 |
| Junior Year | RNR 316 (Natural Resources – Ecology) | 3 | RNR 384 (Natural Resources – Management Practices) | 3 |
| | Tier 2 Arts or Humanities | 3 | SWES 474 (Aq Plants) or 475 (Algae) or RAM 382 (Plant Comm) | 3 or 4 |
| | ANS 213, AN S 312, or ECOL 320 (Genetics) | 3 or 4 | WSM 468 (Wildland Water Quality) | 3 |
| | WFSC 482 (Ichthyology) | 4 | Technical Electives | 6 |
| | RNR 403 or RNR 417 (Intro to GIS) or Technical Elective | 3 | | |
| | TOTAL | 16/17 | TOTAL | 15/16 |
| Senior Year | AN S 215 or PSIO 201 or VSC 400A (Anatomy & Physiology) | 4 | WFSC 455R/L (Fisheries Management) | 4 |
| | WFSC 441 (Limnology) | 4 | WFSC “ology” (e.g., Aquatic Entomology) ⁴ | 4 |
| | RNR 485 (Nat Resources –Economics & Planning) | 4 | WFSC 456 (Aquaculture), WFSC 444 (Avian Mgmt), or 446 (Wildlife Mgmt) | 3 |
| | Technical Elective | 3 | RNR 480 (Natural Resources – Policy & Law) | 3 |
| | TOTAL | 15 | TOTAL | 14 |

Bold = SNR Core

¹ One general education course must have the non-Western Civilization, Gender, Race, Class, Ethnicity designation.

² Required for certification as a fisheries biologist by the American Fisheries Society. If you opt against certification, you must take a technical elective.

³ Must complete at least 12 units of technical electives number 300 or above related to WFSC. Consult your advisor and the back of this sheet.

⁴ Students must select one taxonomy course from ENTO 405 (Aq. Ento); SWES 474 (Aq. Plants), 475 (Algae); ECOL 483 (Herp), 48 (Ornithology), 485 (mammalogy)

Suggested Technical Electives (Complete at least 12 units)

Ecology/Zoology/Animal Health

ECOL 335 (Evolution)
ECOL 473 (Topics in Behavioral Ecology)
ECOL 487 (Animal Behavior)
ECOL 403 (Biology of Animal Parasites)
3rd “Ology” of ECOL 483 (Herpet), 484 (Ornith), 485 (Mammal), 482 (Ichthy)
NSC 408 (Nutritional Biology)
VSC 449 (Diseases of Wildlife)

Economics/Policy/Planning

AREC 217 (Resources & Environmental Econ)
AREC 350 (Econ, Ethics & Environmental Management)
AREC 375 (Econ of Land & Water in the American West)
AREC 377 (Econ of Environ. Resource Conservation)
POL 481 (Environmental Policy)

Botany/Plant Science

RAM 436 (Grazing Ecology and Management)
RAM 446 (Vegetation Management of Wildlands)
RAM 456A (Rangeland Inventory & Monitoring)

Tools/Techniques/Internships

RNR 419 (Cartographic Modeling for Natural Resources)
RNR 420 (Advanced GIS)
RNR 422 (Resource Mapping)
RNR 493 (Internship)
RNR/WFSC 499 (Independent Study)

Natural Resources

RNR 438 (Fire Ecology)
RNR 489a & 489b (Advanced Environmental Interpretation)
ECOL 442 (Marine Ecology)
ECOL 450 (Marine Discovery)

Courses Required for Certification by the American Fisheries Society

Course Grade must be “C” or better (No Pass/Fail)

- A. Fisheries and Aquatic Sciences: Four courses, 2 must be directly related to fisheries sciences (e.g., Ichthyology, Fishery Management, Aquatic Plants, Aquatic Entomology, Algae, Aquaculture, Limnology)
- B. Other Biological Sciences: When added to the courses in section A, must total 30 semester hours (e.g., Basic Biology, Genetics, Anatomy, Disease, Nutrition, Botany, Zoology)
- C. Physical Sciences: Must total 15 semester hours (e.g., Chemistry, Physics, Soils, Water Quality)
- D. Mathematics and Statistics: Must include college algebra or calculus and 1 course in statistics. Must total 6 semester hours.
- E. Communications: Must total 6 semester hours (e.g., Public Speaking, Technical Writing)