

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/snr)

	FALL		SPRING	
Freshman	Tier 1 Nat Sci – CHEM 151 (Gen. Chem & Lab)	4	Tier 1 Nat Sci – CHEM 152 (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 182R/L (Life Sci. of Bio & Lab)	4
	Tier 1 Individuals and Societies Elect.	3	MATH 113, 124, or 125 (Calculus)	3/5
			Tier 1 Individuals and Societies Elect.	3
	TOTAL	14	TOTAL	17/19
Sophomore	Tier 2 Ind & Soc – ECON 201a (Intro Econ - Micro) or Econ 200	3	Tier 1 Traditions and Cultures Elect. ¹	3
	CHEM 241a, 243a or PHYS 102, 181 or SWES 200, 201	4	Tier 1 Traditions and Cultures Elect.	3
	MATH 160 or 263 (Statistics)	3	ENGL 308 (Tech. Writ) or SWES 408 (Sci. Writ or, AED 422)	3
	RNR 200 (Foundations in History & Policy)	3	RNR 321 (Natural Resources – Measurements)	3
	RNR 230 (Nat. Resources – Field Botany)	3	COMM 119 (Public Speaking) ² or Technical Elective	3
		TOTAL	16	TOTAL
Junior	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 RA M 382 (Plant Comm)	3/4
	PL S 312 or ECOL 320 (Genetics)	4	WS M 468 (Wildland Water Quality)	3
	WFSC 482 (Ichthyology—Alt. Falls)	4	Technical Elective	3
	RNR 403 or RNR 417 (Intro to GIS) or Technical Elective	3		
		TOTAL	17	TOTAL
Senior	WFSC 441 (Limnology)	4	WFSC 455R/L (Fisheries Management)	4
	Technical Electives	9	WFSC “ology” (e.g. Aquatic Entomology) ³	4
			WFSC 456 (Aquacult), WFSC 444 (Avian Mgmt), or 446 (Wildlife Mgmt)	4
			RNR 480 (Natural Resources – Policy & Law)	3
		TOTAL	13	TOTAL

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 Students must select one taxonomy course from ENTO 405 (Aq. Ento); SWES 474 (Aq. Plants), 475 (Algae); ECOL 483 (Herp), 484 (Ornith.), 485 (Mamm)

Suggested Technical Electives (Complete at least 12 units)

Ecology/Zoology/Animal Health

AN S 215 (Animal Anatomy and Physiology)
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)