

FORMAT 5

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 electronic copy to jbharvie@alaska.edu)

PROGRAM/DEGREE REQUIREMENT CHANGE (MAJOR)

SUBMITTED BY:

Department	SNRAS	College/School	SNRAS
Prepared by	Peter Fix	Phone	6926
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See <http://www.uaf.edu/uafgov/faculty->

areas such as field and greenhouse plant production, domestication and propagation of native plants, revegetation, domestic and native animal production, and agricultural and ecological aspects of soil science.

The humans and the environment concentration focuses on human interactions with the environment and the balancing of uses, needs and values regarding natural resources. Humans and the environment students will gain a solid foundation in the physical sciences relevant to resources management, but will be distinguished by a focus on social science course work. Students have the opportunity to integrate international study into the degree option. Humans and the environment graduates will have skills needed to identify differing social values, understand policy and the legal foundations of resource management issues, and have knowledge of methods to develop management plans and implement decisions. Graduates will be well-positioned for a variety of careers in public resource management agencies, tribal organizations, private firms and non-profits.

Graduates of the program will have acquired a foundation in the biological, social and physical sciences and a blend of classroom, laboratory and fieldwork experience needed to develop skills for a career. The forestry program leads to a professional degree in forestry. The program is accredited by the Society of American Foresters.

State and federal agencies such as the Alaska Department of Natural Resources, Agricultural Research Service, U.S. Forest Service, Bureau of Land Management, Natural Resource Conservation Service and U.S. Fish and Wildlife Service contribute significantly to the instructional program by providing guest lecturers and internship and fieldwork opportunities for students.

Major -- BS Degree

Concentrations: Forestry; High Latitude Agriculture; Humans and the Environment

1. Complete the general university requirements. (See page 131. As part of the core curriculum requirements, complete a MATH--Calculus course.)
2. Complete the BS degree requirements. (See page 136. As part of the BS degree requirements, complete STAT F200X*.)
3. Complete the following (major) requirements: *
 - BIOL F115X--Fundamentals of Biology I**--4 credits
 - BIOL F116X--Fundamentals of Biology II**--4 credits
 - BIOL F271--Principles of Ecology--4 credits
 - CHEM F105X--General Chemistry***--4 credits
 - CHEM F106X--General Chemistry***--4 credits
 - ECON F235--Introduction to Natural Resource Economics--3 credits
 - NRM F101--Natural Resources Conservation and Policy--3 credits
 - NRM F106--Orientation to Natural Resource Management--1 credit
 - NRM F304W,O--Environmental Decision Making--3 credits
 - NRM F380W--Soils and the Environment--3 credits
 - NRM F405W--Senior Thesis in Natural Resources Management I--2 credits
 - NRM F406W--Senior Thesis in Natural Resources Management II--2 credits
4. Complete one of the following concentrations: *

Forestry

- a. Complete the following:
 - BIOL F239--Introduction to Plant Biology (4)
 - or NRM F211--Introduction to Applied Plant Science (3)--3 - 4 credits
 - ECON F335O--Intermediate Natural Resource Economics--3 credits
 - GEOS F101X--The Dynamic Earth--4 credits
 - NRM F204--Public Lands Law and Policy--3 credits
 - NRM F251--Silvics and Dendrology--4 credits
 - NRM F290--Resource Management Issues at High Latitudes--2 credits
 - NRM F338--Introduction to Geographic Information Systems--3 credits
 - NRM F340--Natural Resources Measurement and Inventory--3 credits
 - NRM F365--Principles of Outdoor Recreation Management--3 credits
 - NRM F370--Introduction to Watershed Management--3 credits
 - NRM F430--Resource Management Planning--3 credits
 - NRM F450--Forest Management--3 credits
 - NRM F440--Silviculture--3 credits
 - NRM F452--Forest Health and Protection--3 credits
 - NRM F453--Harvesting af]TJ -0.001 Tw 4.289 0 Td (-)Tj -0.1U17(fH2TJ -0.001 T(P)001 Tz)-1(t)-3Tc -0.001 Tw 12.26o(o)3f

c. Complete at least 2 credits from the following:
NRM F290--

environment. The forestry concentration offers students the opportunity to focus on the multi-resource management of forests and associated ecosystems for the sustained production of goods and services and to prepare for forestry-

~~—High Latitude Agriculture~~

~~a. Complete the following:~~

~~BIOL F331 Systematic Botany (4)~~

~~—or BIOL F310 Animal Physiology (4)~~

~~—or BIOL F317 Comparative Anatomy of Vertebrates (4) 4 credits~~

~~NRM F211 Introduction to Applied Plant Science 3 credits~~

~~NRM F290 Resource Management Issues at High Latitudes 2 credits~~

~~NRM F312 Range Management 3 credits~~

~~NRM F320 Animal Science 3 credits~~

~~NRM F480 Soil Management for Quality Conservation (3)~~

~~—or NRM F485 Soil Biology* (3)~~

~~—or NRM F466 Environmental Soil Chemistry (3) 3 credits~~

~~b.~~

2. Minimum credits required--18 credits

* At least 6 credits must be upper-division. The minor program must be approved by an NRM advisor.

D. ESTIMATED IMPACT

WHAT IMPACT, IF ANY, WILL THIS HAVE ON BUDGET, FACILITIES/SPACE, FACULTY, ETC.

We are not requesting additional faculty, facilities or space to facilitate these changes. The new courses will fit within workloads of current faculty. We anticipate the sharper focus and stronger emphasis on sustainability will attract new students to the program and UAF, resulting in a positive impact on the budget.

E. IMPACTS ON PROGRAMS/DEPTS:

What programs/departments will be affected by this proposed action?

Include information on the Programs/Departments contacted (e.g., email, memo)

BIOL 371 will no longer be required in the core and the requirement of either BIOL 331, 310 or 317 in the High Latitude Agriculture concentration is no longer required. Diane Wagner, chair Biology and Wildlife is aware of this and has no issues with the change (see email).

F. IF MAJOR CHANGE - ASSESSMENT OF THE PROGRAM:

Description of the student learning outcomes assessment process.)

The current outcomes assessment evaluates the grades on the written senior thesis and the oral presentation of the senior thesis. In addition a sample of past and current written theses are evaluated to detect any changes in the students' writing skills and their ability to think independently and solve problems.

With the proposed degree we will evaluate the grades on the written research proposal and oral

respective departments, but the core classes in the degree are shared among those departments. This structure results in challenges when changing degree requirements.

4. **Barriers to integration across disciplines in NRM.** A strength of the SNRAS faculty is its interdisciplinary composition. For example, other schools in the Western University Exchange (WUE) often offer separate degrees in the fields of our concentrations, with a trend to create new interdisciplinary departments or degrees to focus on responding to complex problems (e.g., Colorado State University's Department of Forest and Rangeland Stewardship and associated Natural Resources Management degree, University of Montana's Resource Conservation degree). SNRAS has a functional structure for integration of faculty members from various disciplines, but we have yet to fully capitalize on that structure.

5. **Courses with low enrollment.** As mentioned in #1, some SNRAS classes have low enrollment. It is not plausible to continue to offer courses with low enrollment.

The goals of this program change are to build on the current strengths of the SNRAS and the NRM degree, while addressing the issues mentioned above. More specifically:

- x Better align the degree with the current move to more integrated natural resource decision making grounded in sustainability science.
- x Combine academic departments into one department and offer a degree without concentrations.
- x Increase coordination among courses to ensure a sustainability theme is present.
- x Clearly convey the intent of the degree to students.
- x Reduce credits required to 120.

Proposed Changes

Courses dropped from the core

The new NRM core drops three courses from the current core:

- 1) NRM F106x Orientation to Natural Resource Management, 1 credit
- 2) BIOL F371 Principles of Ecology
- 3) NRM F406W Senior Thesis in Natural Resource Management II, 2 credits

The reasons for these changes are as follows.

- x NRM F106 was often petitioned out of by students and the material will be covered in

- 1) **NRM F240 Natural Resource Measurements.** The existing NRM 340 course will be taught at the 200 level to provide students with an introduction to measurements prior to taking the 300-level NRM courses.
- 3) **NRM F366 Survey Research in Natural Resources Management.** This course is currently offered at the 400 level. It will be offered at the 300 level so it better aligns as a course to be taken prior to the NRM capstone courses.
- 4) **NRM F375 Natural Resource Ecology.** This course will be revision of NRM 375 Forest Ecwill

x FISH F487--Fisheries Management--3 credits

Courses that will likely not continue to be offered:

x NRM F410 Numerical methods for Natural Resource Management. Currently there is not an instructor for this course.

SEE ATTACHED SIGNATURES

APPROVALS:

	Date	
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Signature, Chair, Program/Department of:

	Date	
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Signature, Chair, College/School Curriculum Council for:

	Date	
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Signature, Dean, College/School of:

ALL SIGNATURES MUST BE OBTAINED PRIOR TO SUBMISSION TO THE GOVERNANCE OFFICE

	Date	
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Signature, Chair, UAF Faculty Senate Curriculum Review Committee



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**School of Natural Resources and Agricultural Sciences
Agricultural and Forestry Experiment Station**

M E M O R A N D U M

TO: _____ Susan Henrichs, Provost _____

School of Natural Resources and Agricultural Sciences
Agricultural and Forestry Experiment Station

DATE: September 27, 2013

RE: Signature Authority

I will be in Girdwood for the 8th Circumpolar Agricultural Conference/University of the Arctic Inaugural Food Summit meetings September 29-October 3, and Palmer October 4. During my absence, Professor John Yarie will have signature authority for all routine paperwork for the School of Natural Resources and Agricultural Sciences and Agricultural and Forestry Experiment Station.