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*PROGRAM/DEGREE REQUIREMENT CHANGE (MAJOR/MINOR)*

**SUBMITTED BY:**

Department	Resources Management	College/School	SNRAS
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See <http://www.uaf.edu/uafgov/faculty> for a complete description of the governing curriculum & course changes.

**PROGRAM IDENTIFICATION:**

DEGREE PROGRAM	Natural Resources Management
Degree Level: (i.e., Certificate, A.A., A.A.S., B.A., B.S., M.A., M.S., Ph.D.)	BS

**A. CHANGE IN DEGREE REQUIREMENTS: (Brief statement of program/degree changes and objectives)**

This is a revision to the Resources Concentration ~~and~~ BS in Natural Resources Management degree. The concentration title and description have been revised to better reflect the objective of the degree concentration. The concentration requirements have been modified and reorganized. The reorganization reflects the focus of this concentration on the social science aspect of natural resource management. The objective of the degree concentration is to provide students ~~the~~ skills to identify differing social ~~values~~, understand the policy and legal foundations of resource management issues, and ~~have~~ ~~an~~ ~~understanding~~ of methods to develop management plans and implement decisions.

**Minimum Requirements for Degree: 130 credits**

Natural resources management is making and implementing decisions to develop, maintain or protect ecosystems to meet human needs and values. The core natural resources management curriculum provides students with a broad education in the various natural resources and their related applied fields. Programs can be tailored to enhance a student's depth or breadth in a given field of interest. The program is designed for students desiring careers in resources management or in other fields requiring knowledge of resources management and students planning advanced study, as well as those wishing to be better informed citizens.

The B.S. degree has three concentrations: forestry; high latitude agriculture; and resources. 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 related employment. The natural resources managemen

The goals of UAF's forestry program are to produce graduates who

a. Complete the following:

NRM F211—Introduction to Applied Plant Science.....	3
NRM F290—Resource Management Issues at High Latitudes...	2
NRM F312—Range Management.....	3
NRM F320—Animal Science.....	3
NRM F480—Soil Management for Quality Conservation (3) or NRM F485—Soil Biology* (3).....	3
or NRM F466—Environmental Soil Chemistry (3)	
b. Complete at least 8 credits in biology, botany, physics, chemistry, geosciences and/or mathematics, in addition to the above basic courses. Courses must be approved for science majors.	
c. Complete at least 9 credits in natural resources management electives:	
NRM F102—Practicum in Natural Resources Management (1 – 2)	
and any other NRM course at the F200-level or above that has not been used to meet other requirements.	
NRM F204—Public Lands Law and Policy.....	3

NRM F365—Principles of Outdoor Recreation Management....3  
NRM F370—Introduction to Watershed Management.....3  
NRM F430—Resource Management Planning.....3  
WLF F201—Wildlife Management Principles (3)  
or FISH F401W,O/2—Fisheries Management (3).....3  
b. Complete at least 9 credits from the humans and the  
environmental electives category. Courses involve human  
effects on the environment and its products through

C. PROPOSED REQUIREMENTS AS IT WILL APPEAR IN THE CATALOG WITH THESE CHANGES:  
(Underline new wording, strike through old wording, and use complete catalog format )

NATURAL RESOURCES MANAGEMENT

School of Natural Resources and Agricultural Sciences

907-474-7083

[www.uaf.edu/snras/](http://www.uaf.edu/snras/)

B.S. Degree

Minimum Requirements for Degree: 130 credits

Natural resources management is making and implementing decisions to develop, maintain or protect ecosystems to meet human needs and values. The core natural resources management curriculum provides students with a broad education in the various natural resources and their related applied fields. Programs can be tailored to enhance a student's depth or breadth in a given field of interest. The program is designed for students desiring careers in resources management or in other fields requiring knowledge of resources management and students planning advanced study, as well as those wishing to be better informed citizens.

The B.S. degree has three concentrations: forestry; plant, animal, and soil sciences; and resources. 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 related employment. The natural resources management/forestry program is the only accredited four-year forestry program in Alaska.

The goals of UAF's forestry program are to produce graduates who are highly competitive in obtaining professional employment, who have the knowledge to perform well on the job and who are valued for work in Alaska and the circumpolar North; maintain close student interaction with faculty and provide opportunity for students to obtain practical professional experience as part of their education; and to prepare students for lifelong learning and responsible participation in decision-making about the use of natural resources.

The university provides students with a foundation in the biological, social and physical sciences and blend of classroom, laboratory and field work to develop skills for a career in forestry. The forestry program leads to a professional degree in forestry. The program is accredited by the Society of American Foresters (SAF).

The high latitude agriculture concentration offers opportunities for scientific study and education in 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 resources concentration emphasizes responsible stewardship in the management of multiple resources that occur in natural systems. Field and laboratory activities and applications of knowledge gained are stressed throughout the program. Internships and work-study arrangements are often available for qualified students.

The Humans and the Environment concentration focuses on human interactions with the environment and the balancing of uses needs and values regarding natural resources. H&E students will gain a solid foundation in the physical sciences relevant to resources management, but will be distinguished by a focus on social science coursework. Examples of such coursework include policy and law, planning, economics, and survey research methods. Students have the opportunity to integrate international study into the degree option. H&E graduates will have skills to identify differing social values, understand the policy and 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 caree

or FISH F401W,O/2—Fisheries Management (3).....3

b. Complete three of the following to total at least 8 credits:\*\*\*\*

1. Complete at least one of the following non-measurements courses:

BIOL F331—Systematic Botany.....4

FIRE—Any course on wildland fire control/management.....3

GEOS F408—Photogeology.....2

NRM F277—Introduction to Conservation Biology.....3

NRM F300—Internship in Natural Resources Management\*\*\*\*\* .....1 – 6

NRM F303X—Environmental Ethics and Actions\*\*\*\*\* .....3

NRM F312—Introduction to Range Management.....3

WLF F201—Wildlife Management Principles (3)

or FISH F401W,O/2—Fisheries Management (3).....3

2. Complete at least one of the following measurements courses:

CE F112—Elementary Surveying.....3

GEOS F422—Geoscience Applications of Remote Sensing...3

NRM F341—GIS Analysis.....4

STAT F401—Regression and Analysis of Variance.....4

STAT F402—Scientific Sampling.....3

\* Student must earn a C grade or better in each course.

\*\* Satisfies core natural science requirement.

\*\*\* Satisfies B.S. degree natural science requirement.

\*\*\*\* Courses other than those listed must be approved by student's advisor.

\*\*\*\*\* Must be forestry related.

\*\*\*\*\* If used to fulfill the baccalaureate core requirement for ethics/values and choices in the perspectives on the human condition, NRM F303X may not also count toward a natural resources management major. However, in this case, only two courses that total at least 5 credits are required



NRM F251—Silvics and Dendrology.....	4
NRM F312—Introduction to Range Management.....	3

MIN F101—Minerals, Man and the Environment.....	3
MIN F400—Practical Engineering Report.....	1
MIN F407W—Mine Reclamation and Environmental Management.....	3
NRM F277—Introduction to Conservation Biology.....	3
NRM F300—Internship in Natural Resources Management.....	3
NRM F312—Introduction to Range Management.....	3
NRM F404—Environmental Impact Statement Law.....	3
NRM/WLF F431—Wildlife Law and Policy.....	3
NRM F450—Forest Management.....	3
NRM F440—Silviculture.....	3
NRM F465—Outdoor Recreation Planning.....	3
NRM F480—Soil Management for Quality and Conservation...	3
RD F255—Rural Alaska Land Issues.....	3
RD F265—Perspectives on Subsistence in Alaska.....	3
RD F350O—Indigenous Knowledge and Community Research.....	3
WLF F201—Wildlife Management Principles.....	3
WLF F419O/2—Waterfowl and Wetlands Ecology and Management.....	4

c. ~~Select at least 9 credits in approved support field. Selection may include courses listed within the human and the environmental elective category and need not be limited to those with NRM designator. Courses are selected for their clear pertinence to cohesive program and must be approved by the student's academic advisor prior to attaining senior standing. Examples include but are not limited to: communications, data management, economics, marketing, recreation or resources policy. Support fields may also include subject areas in forest and plant, animal, and earth sciences.~~

a. Human Dimensions Courses complete all courses, 24 credits

NRM 101—Natural Resource Conservation and Policy.....	3
NRM 204—Public Lands Law and Policy.....	3
NRM 304—Perspectives in Natural Resource Management.....	3
NRM 365—Principles of Outdoor Recreation Management .....	3
NRM 430—Resource Management Planning..	3
NRM 465—Survey Research in Natural Resources Management .....	3
ECON 235—Introduction to Natural Resource Economics.....	3
ECON 335—Intermediate Natural Res Economics .....	3

\* Courses taken abroad may be applied toward this requirement with departmental approval

b. Resource Management Courses: complete 12 credits minimum

WLF 201— Wildlife Management Principles..	3
NRM 312—Intro to Range Management.....	3
NRM 340—Natural Resources Measurement	

and Inventory.....	3
NRM 370—Introduction to Watershed Management.....	3
NRM 410—Numerical Methods for Natural Resources Management .....	3
NRM 450—Forest Management .....	3
NRM 463—Wilderness Management.....	3
NRM 480—Soils Management for Quality and Conservation.....	3
FISH 487 W,O/2—Fisheries Management.....	3

c. Applied Experiential Courses: complete 2 credits minimum

NRM 290—Resource Management Issues at High Latitudes.....	2
NRM 300—Internship in Natural Resources Management and Geography (H).1-6	

\*Courses taken abroad may be applied toward this requirement with departmental approval

d. Skills Building: complete 9 credits in a single field of study

Skills building provides depth of study in fields employed in Humans and the Environment related careers. Courses to be determined by students in consultation with their advisor and approval of department head.

Examples of Skills Building fields:

- x Forestry
- x Agriculture
- x Law Enforcement
- x Computer application
- x GIS/Remote Sensing
- x Fire Science/Haz mat
- x Business
- x Statistics
- x Aviation
- x Language
- x Fisheries management
- x Wildlife management
- x Curation
- x Art
- x Other



A list of approved classes for each topic is available from the department.

5. Minimum credits required.....130

Note: Courses required for the major may also be used to satisfy the general

**JUSTIFICATION FOR ACTION REQUESTED**

The purpose of the department and campus-wide curriculum committees is to scrutinize program/degree change applications to make sure that the quality of UAF education is not lowered as a result of the proposed change. Please address this in your response. This section needs to be self-explanatory. If you ~~also~~ ~~course~~, is it because the ~~material~~ is covered elsewhere? ~~or~~ ~~as~~ ~~much~~ ~~space~~ ~~as~~ ~~needed~~ ~~to~~ ~~fully~~ ~~justify~~ ~~the~~ ~~proposed~~ ~~change~~ ~~and~~ ~~explain~~ ~~has~~ ~~been~~ ~~done~~ ~~to~~ ~~ensure~~ ~~that~~ ~~the~~ ~~quality~~ ~~of~~ ~~the~~ ~~program~~ ~~is~~ ~~not~~ ~~compromised~~ ~~as~~ ~~a~~ ~~result~~.

The Resources concentration of the NRM BS program has not been updated in many years. The revision presented here is intended to keep the concentration current ~~with~~ ~~changes~~ that have occurred in natural resources management related fields while maintaining the overall rigor of the degree concentration. It is also intended to accommodate planned growth in enrollment in the NRM BS program. The reorganization provides students both a breadth and depth of knowledge in areas relevant to natural resource ~~management~~, with a focus on the human dimension. The NRM major requirements are unchanged by this revision. Accordingly, the Forestry concentration and the High Latitude Agriculture concentration are unchanged.

The changes to Humans and the Environment degree concentration are as follows. The requirements of the degree concentration are structured under revised category headings that provide a clear rationale for the degree concentration. The 'Resources Management' category ~~provides~~ ~~students~~ flexibility in the specific courses they take based on their interests. NRM 312—Intro to Range Management, NRM 340—Natural Resources Measurement and Inventory, NRM 370—Introduction to Watershed Management, and NRM 480—Soils Management for Quality and Conservation that are currently required become ~~optional~~ ~~courses~~ in the revised degree concentration. The required courses under the 'Human Dimensions' category in the revised degree concentration are all required under the current degree concentration. The 'Applied Experience' category provides students several choices to gain experienced based understanding of human interaction with the natural environment. NRM 290—Resource Management Issues at High Latitudes, currently a required course, becomes an optional course. NRM 300—Internship in Natural Resources Management and Geography is more prominently featured in the degree concentration. The internship offering is extended to include exposure to natural resource management in a foreign settings through the new course Internship NRM 3xx—Internship Abroad in NRM. The 'Support Field' category in the current degree concentration is re-titled 'Skills ~~in~~ ~~the~~ ~~field~~.' This category accommodates student exploration of study in fields employed in Humans and the Environment ~~related~~ ~~careers~~. Examples of the 'Skill and the Fields' topics are now provided in the degree concentration description. Finally, the 'Humans and the Environmental Electives' category in the current degree concentration ~~has~~ ~~been~~ ~~re-titled~~ 'Electives in Humans and the Environment' and has been reorganized to assure student have exposure to a breadth of current topics relevant to understanding human interaction with the natural environment. ~~The~~ ~~number~~ ~~of~~ ~~credits~~ ~~in~~ ~~this~~ ~~category~~ ~~has~~ ~~been~~ ~~increased~~ ~~from~~ ~~9~~ ~~to~~ ~~15~~ ~~so~~ ~~that~~ ~~students~~ ~~can~~ ~~also~~ ~~explore~~ ~~specific~~ ~~topics~~ ~~in~~ ~~greater~~ ~~detail~~. The list of elective courses included in this category has been updated based on ~~current~~ ~~University~~ ~~course~~ ~~offerings~~ and based on the contribution of courses to specific topic areas.

**APPROVALS:**

	Date	
Signature, Chair, Program/Department of:		
	Date	
Signature, Chair, College/School Curriculum Council for:		
	Date	
Signature, Dean, College/School of:		

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

Date

Signature, Chair, UAF Faculty Senate Curriculum Review Committee