

Syllabus Senior Thesis

SCHOOL OF NATURAL
RESOURCES AND EXTENSION

University of Alaska Fairbanks

Natural Resources Management NRM 484W

Effective August 2017



2 credits (directed independent research)

Prerequisites: GEOG 483

Location: TBD

Time: TBD

Coordinator: Dr. Jenifer H. McBeath

Office: 130 Arctic Health Research Building

Office hours: TBA

Telephone: (907) 474-7431

Email: jhmcbeath@alaska.edu

Textbook: None.

Course Description

NRM 484, Senior Thesis in Natural Resources Management, is an elective for all students majoring or minoring in Natural Resources Management. The purpose of this course is to provide an opportunity for you to expand your proposal created in GEOG 483 and to demonstrate competency in problem solving, analysis and written communication.

Goals, Learning Outcomes:

The senior thesis is a research report that includes the following major components:

- 1) expanding the proposal written in GEOG 483 into a full research project,
- 2) attempting to answer the question or addressing the problem by conducting an experiment, gathering survey data, analyzing existing literature, creating original plans or curricula, etc.,
- 3) supporting your research with existing literature,
- 4) and sharing your findings with others.

These components differ from a term paper by adding an element of creativity and independent thought. The thesis goes beyond reporting what others have done and allows you to formulate your own question, research it, and defend your conclusions.

Effective communication is one of the most important skills that every student of natural resources management should master. Regardless of the area of specialization, the ability to write and communicate clearly in your field of expertise is essential. The senior thesis course provides an opportunity for you to practice good communication skills within the context of natural resources management. Your efforts will be judged both on content and your ability to communicate effectively with your peers and faculty.

Instructional Methods:

This course is a directed independent research project managed by a faculty mentor identified in GEOG 483. Your mentor is the SNRE faculty member who guided you through GEOG 483. This faculty member will work with you to ensure that the selected project is completed to the standards set for NRM 484. All SNRE faculty will judge your final poster and poster presentation, and your grade will be an average of at least 5 faculty. The faculty will ensure that the high standards developed by the SNRE faculty are maintained. You are encouraged to ask for assistance from outside agency personnel, technicians, research assistants, and graduate students to complete your project. However, they will not be involved in grading any papers or posters.

Evaluation

In order to enroll in NRM 484 for credit, you must have completed GEOG 483 with a C- or better grade. If you receive an incomplete in GEOG 483, it must be successfully completed with a grade before beginning NRM 484. If these criteria are not met, you must receive permission from the course coordinator to enroll.

Letter grades will be given when the course is taken for credit.

NRM 484w:

Draft thesis	100
Final thesis	150
Poster Presentation	100
Submission of final thesis to main office	10
Submission of permission to publish form	10
Total Points	370
Extra credit- oral presentation	50
Extra credit- URSA award	25

Grades will be assigned as follows:

90-100 percent of total points	A
80-89	B
70-79	C
60-69	D
59 and below	F

Students completing an oral presentation and/or receiving an URSA award will be eligible for a + (plus) designation on their transcript.

Course policies:

Plagiarism and Academic Honesty

Plagiarism is using what another person has developed as your own words or thoughts. Plagiarism is never acceptable. UAF requires students to conduct themselves honestly and responsibly and to respect the rights of others. Cheating, plagiarism or other forms of academic dishonesty may result in disciplinary action and sanctions. The UAF Student Code of Conduct is adhered to in this course.

Disability Services

The UAF Office of Disability Services implements the Americans with Disabilities Act (ADA), and insures that UAF students have equal access to the campus and course materials. Your Instructor will work with the Office of Disability Services (208 WHIT, 907-474-5655) to provide reasonable accommodation to students with disabilities.

UAF Disability Services for Distance Students UAF has a Disability Services office that operates in conjunction with the College of Rural and Community Development (CRCD) campuses and UAF Center for Distance Education (CDE). Disability Services, a part of UAF Center for Health and Counseling, provides academic accommodations to enrolled students who are identified as being eli-

gible for these services. If you believe you are eligible, please visit the Office of Disability Services on the web or contact a student affairs staff person at your nearest local campus. You can also contact Disability Services on the Fairbanks Campus at (907) 474-5655, fydso@uaf.edu.

Make up quizzes and exams will be given only in emergency situations. (Note from Dean, Physician, Employer).

Incomplete grades: Incompletes will be given only in the case of family or medical emergencies or circumstances beyond your control. You must have a C- or better average in the class, have attended all of the classes and labs, and shown good progress toward completing the course BEFORE the emergency in order to receive an incomplete grade.

Audits: Auditing is not possible.

Spelling and Grammar: All papers and presentations will be evaluated on content as well as written and oral communication skills. All papers will be edited and points deducted for inaccurate spelling, punctuation, poor grammar, and inaccurate or incomplete format as specified. Oral presentations will be graded on content as well as presentation effectiveness. Posters will be graded on content, layout, and effectiveness in communication. Written supporting materials also will lose points for inaccurate spelling and poor grammar.

Course coordinator

The **course coordinator** is the SNRE faculty member in charge of the course. The coordinator will develop the class calendar and submit grades at the end of the semester. During posted office hours, the coordinator will answer all questions regarding the processes and policies of NRM 484. The coordinator will submit final grades. The coordinator will establish the deadlines for completion of individual components of the thesis and will ensure that all requirements and standards are met. Presently the coordinator is:

Dr. Jenifer H. McBeath
Arctic Health Research Bldg., Room 130
474-7431 jhmcbeath@alaska.edu

The course coordinator will attempt to solve problems that may arise between you and your mentor. If the problem cannot be resolved, an **appeal committee** will be formed that will include three faculty members not associated with the project (selected by the dean). The committee's decision is final.

Prior Research

Research completed by you prior to completion of GEOG 483 will not be accepted. Your draft and final proposal must be accepted by your mentor prior to beginning NRM 484.

Human and Animal Research

If your topic involves the use of human research participants (i.e. surveys, school visits), you and your mentor must complete an approved educational program (CITI). The training program is available online at <http://www.miami.edu/citireg/>. Be sure to select University of Alaska Fairbanks

from the "All others" drop down menu so that the Office of Research Integrity will receive a copy of the completed certificate. Dr. Peter Fix will assist any student and their committee in meeting the requirements for using human research participants. Contact Dr. Fix once a topic description has been formulated.

All research with animals requires a review by the University of Alaska Fairbanks Institutional Animal Care and Use Committee (IACUC). You must complete the application and have it approved before any research is conducted. These rules apply for all animal research including laboratory studies, fish tagging research, migratory bird work, etc. Work with your advisor to fulfill the requirements of this office and contact the IACUC office for application forms (fyiacuc@uaf.edu, www.uaf.edu/iacuc). Dr. Milan Shipka will assist any student in meeting the requirements for animal research.

The Senior Thesis

Two versions of your thesis will be graded: a draft and a final thesis. You may submit as many drafts as necessary to your mentor prior to receiving a grade. Notify your advisor whether or not the draft is to be graded, and staple to the top, the grading sheet included in this syllabus. One final clean copy of your thesis with all corrections made must be submitted in PDF format to Cathy Donaldson in the main office O'Neill 303. Bring a flash drive to the office or email an attachment to Cathy.

A portion or all of your thesis may be published by you and your advisor or committee at a later date. Selected abstracts will be published through the School of Natural Resources and Extension and on the SNRE website. You will receive full credit for anything that is published through SNRE. Abstracts will be published with the student as sole author and an acknowledgment of your mentor. Publications resulting from the thesis will have the student as first author unless additional creative work or extensive rewrite is necessary for publication. Coauthors may include the mentor and any other person who contributed substantially to the creative nature of the thesis. The best senior theses may be nominated for publication, as is, through SNRE. These theses are available to view and download at <https://scholarworks.alaska.edu/handle/11122/2806>. These have been edited to fit the format of the SNRE publications office and are not in the senior thesis format.

When you hand in your final copy, you will be asked to sign a "Permission to Publish" form (Appendix 4). This form will allow SNRE to publish your abstract or for your major advisor to help you format your thesis for further publication. Please include an address and telephone number in case your thesis or a portion of it will be published at a later date. You will receive credit for ALL publications resulting from your thesis, and this information will be used to contact you after you graduate.

THESIS STYLE

Discuss with your mentor how to handle thesis style, footnotes, what abbreviations are acceptable for units of measurement and other questions regarding writing style. If you are interested in publishing your thesis, most agencies have guidelines dictating specific components and writing style. Your thesis may be written in the style outlined by a specific publication, but the style must be

approved by your advisory committee. It is easier to write your thesis from the beginning in a particular style of the publication rather than rewriting your thesis later.

Most scientific journals review manuscript requirements in an "Instructions to Authors" section in the first issue published each year and are usually available online from each journal. These instructions usually are abbreviated, and will include an address for obtaining more information. Your thesis mentor can assist you in obtaining the appropriate instructions. Journals often have their own style manuals. Discuss with your mentor the appropriate style manual for the journal you have chosen.

If you use Endnote® and Microsoft Word® to compose your thesis, choose a scientific journal that most closely aligns with your specialty as your style. Ask your mentor for assistance.

THESIS FORMAT

The components listed below are required for your thesis, and each must be clearly identified as section headings (in bold type).

1. **Title page** (use sample thesis title page)
2. **Abstract** (on page by itself with heading)
3. **Introduction** including
 - Statement of question/objectives/hypothesis/problem
 - Importance or significance of research
 - Objectives
4. **Literature Review**
5. **Methods**
6. **Results**
7. **Discussion and Conclusions** (may be 2 separate sections)
8. **Literature Cited**

Title Page - The following information must be included on the title page: title, presentation statement, name of degree, your full name, name of your mentor, location, month and year. A sample title page is included in this syllabus.

Abstract - In 150 words or less, state the nature and content of the thesis in an abstract. This abstract should include the objectives/question/hypothesis of the study, an overview of the methods, the results and conclusions. It does not include any literature citations because it is work that you have done, not other people. This part of the thesis is often the most difficult to write. It is hard to condense your entire thesis into 150 words. Although the abstract contains small portions of your introduction, results, etc., These components do not normally follow in the same order as your thesis. Sometimes a single sentence may contain introduction, methods and objectives. Another might contain results and methods. On the next page are two examples of abstracts that give you an idea of how they are constructed to fit all your ideas in 150 words or less. Some people find it handy to use a worksheet to construct an abstract so that no essential components are left out. A sample worksheet may be found in Appendix 5.

Abstract Example 1

Lingonberries from eight geographically-widespread selections were propagated by micro-shoots from tissue culture and conventional stem cuttings. Rooted plants were evaluated after two growth cycles to compare rhizome and daughter shoot production among selections and between propagation methods. Sixty percent or fewer of the plants from all selections produced rhizomes when propagated by conventional stem cuttings. Rhizome production among selections from micro-shoot propagation varied from 100 percent to zero. Overall, propagation by tissue culture produced the greatest number and biomass of rhizome and daughter shoots. However, significant variation among selections highlights the importance of evaluating individual clones in breeding programs for the ability to produce rhizomes rapidly from tissue culture. (110 words)

Abstract Example 2

Current economic situations such as lumber mill closures in southeast Alaska have stimulated interest in commercial development of secondary forest products which includes resources other than wood pulp and saw logs. Twenty native species were identified as potential secondary forest products based on a score of their combined economic value and abundance throughout southeast Alaska. Details about the potential uses, ecological requirements, propagation and management related to the marketable attributes provided the foundation for scoring. Eleven of the 20 species were useful in wild berry markets, while six species could provide floral products. One species had value both as a floral product and tree seedling production for revegetation. Two of the top 20 species had uses as botanicals. There is substantial potential for development of secondary forest products in southeast Alaska primarily through wild berry harvesting.

Introduction, literature review, methods, results, discussion and conclusions - These sections contain the text of the thesis. There are no page requirements. Refer to the required text and notes from the workshops for the content of each of these sections. All figures and tables should be discussed in the text and should be located on a separate page immediately following their first mention in the text. They should be numbered consecutively, and an appropriate title should be included above each.

Photographs reproduced on a standard 8 1/2 x 11 inch sheet of paper or photocopied directly onto thesis paper may be included.

Literature Cited - Only references cited and/or discussed in the thesis should be listed in the literature cited section. Use Endnote and connections with MS Word, and discuss with your advisor the appropriate methods of citation for books, periodicals, etc.

An **acknowledgments** section is inserted after the final revision of your thesis and is not graded. In this section you should acknowledge and thank all the people who helped you with your thesis including your mentor, other assistants, funding agencies, family members, and others. It should be located on a separate page just after the title page.

An **appendix** may be included if supporting information such as a survey document are a nec-

essary component of your thesis. All appendices should be titled and referred to as Appendix A, B, or Appendix 1, 2, etc. in the text. The appendix should be the last section of the thesis.

Margins - Provide a one-inch margin on all sides of the thesis. If you intend to bind the left, edge, provide a 1.5 inch margin.

Page numbers and spacing - All pages except the title page **MUST** be numbered. Numbers should occur within the margins listed above. All text should be double spaced except for the titles of figures and tables. Long quotes in block format and footnotes should be single spaced.

Paper and printing - The final thesis should be typewritten on one side of the paper only on white typing paper. Any simple, non-script font, 12-point size or larger is acceptable. Any dot matrix printer, inkjet printer, laser printer or typewriter may be used as long as the thesis is easily readable and "letter quality".

Spelling and Grammar - Your thesis will be evaluated both on content and on your written communication skills. Your thesis mentor and the coordinator will reject any draft or final thesis that has not been edited for spelling, punctuation and grammatical errors. Visit the UAF Writing Center. The tutors can provide invaluable assistance in editing and writing. Most assistants in the writing center know a particular style such as MLA. Make sure you take a copy of this handbook to ensure they understand the style you are working with.

Poster and Presentation

Within the 12-14th week of the semester, you will present your poster to the faculty and your peers. In fall semester, the presentations will be coordinated with SNRE Research Day and will be held prior to finals usually during the first week of December. It will be held in Wood Center, so dates will have to fit into their schedule. In spring semester, due dates will be centered around URSA research day, usually held in April. Deadlines are not negotiable.

Prepare a poster using URSA guidelines. Be prepared to stand near your poster for 1 1/2 hours to answer questions from the audience. You will also be graded by at least five SNRE faculty members. These grades will be based on content and communication effectiveness. The final grade will be an average of the five grades.

Grading

Submit all papers to your mentor along with the appropriate grading sheet. Remind them they have one week to return comments and grades. Do not hand in grades yourself. They will be rejected. Only your mentor can hand in grades.

Papers:

- 1) **Draft thesis** - submit one draft to your mentor at least one month before the end of the semester and one week prior to poster presentations (November 10, 2017).
- 2) **Final thesis**- submit one completed thesis to your mentor on the final day of classes (Dec. 9, 2017)
- 3) **Poster**- submit one digital version to your mentor at least 2 weeks before the URSA deadline (Nov. 20)
- 4) **Presentation**: Five grading sheets will be handed out to faculty including your mentor at the time of your presentation. They will be returned to the coordinator at the end of the session.

Sample title page for proposal and thesis

ENVIRONMENTAL EDUCATION LEGISLATION AND ITS IMPACT ON ALASKA
SECONDARY ENVIRONMENTAL EDUCATION PROGRAMS

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Change to appropriate document heading
senior thesis

A

SENIOR THESIS

Presented to the Faculty
of the

*****School of Natural Resources and Geology
University of Alaska Fairbanks

and

The Senior Thesis Office

****D.K. Holmes

in partial fulfillment of the requirements
for the degree of

BACHELOR OF SCIENCE

in

NATURAL RESOURCES MANAGEMENT

by

Jane Elizabeth Doe

Fairbanks, Alaska

May, 20--

Draft Thesis Grades

Student name: _____

Mentor name: _____

Date submitted: _____

Date graded: _____

Comments on thesis content:

- _____ all components present: title page, abstract, introduction, literature review, methods, results, discussion/conclusions, literature cited
- _____ clear statement of hypothesis/question/objectives
- _____ pertinent literature citations using appropriate citation style
- _____ well-organized methods that support question
- _____ discussion/conclusions show creativity, thorough analysis, integration of previous work with current findings, clear understanding of project

Comments on writing skills:

- _____ ideas clearly stated in a well-organized, logical manner
- _____ easy to read and understand
- _____ free of factual errors
- _____ free of grammatical, spelling and punctuation errors
- _____ language is appropriate for the topic and thesis
- _____ follows thesis format
- _____ not wordy, no extraneous material

Points for the draft thesis

Points for content (75)

Points for written communication skills (75)

Total points (150 possible)

Deductions for incorrect format (up to -20 points)

Deductions for spelling and grammatical errors (-1/2 point each)

Deduction for late paper (-10 points per day)

Final points

Please return via email or paper to Jenifer McBeath or Cathy Donaldson. Papers handed in by the student will be rejected.

Final Thesis Grades

Student name: _____

Mentor name: _____

Date submitted: _____

Date graded: _____

Comments on thesis content:

- _____ all components present: title page, abstract, introduction, literature review, methods, results, discussion/conclusions, literature cited
- _____ clear statement of hypothesis/question/objectives
- _____ pertinent literature citations using appropriate citation style
- _____ well-organized methods that support question
- _____ discussion/conclusions show creativity, thorough analysis, integration of previous work with current findings, clear understanding of project
- _____ substantive changes made from draft to reflect committee comments, suggestions

Comments on writing skills:

- _____ ideas clearly stated in a well-organized, logical manner
- _____ easy to read and understand
- _____ free of factual errors
- _____ free of grammatical, spelling and punctuation errors
- _____ language is appropriate for the topic and thesis
- _____ follows thesis format
- _____ not wordy, no extraneous material

Points for the senior thesis

Points for content (75)

Points for written communication skills (75)

Total points (150 possible)

Deductions for incorrect format (up to -20 points)

Deductions for spelling and grammatical errors (-1/2 point each)

Deduction for late paper (-10 points per day)

Final Points.....

Please return via email or paper to Jenifer McBeath or Cathy Donaldson. Papers handed in by the student will be rejected.

Poster/Presentation Grading Sheet

Student name: _____

Grader name: _____

Date: _____

Comments on Poster content:

Comments on oral presentation skills:

- _____ student effectively described the contents of the poster
- _____ student summarized their research without reading the poster
- _____ student effectively communicated with audience
- _____ student was professional in presentation style, appearance, and language
- _____ students engaged their audience in a good discussion of their project

Comments on poster

- _____ message was clearly presented in a well-organized, logical order
- _____ materials truly supported the topic (no extraneous photos, graphics)
- _____ colors and styles enhanced the message
- _____ not wordy- poster was mostly pictures, figures, tables, bulleted sentences or short paragraphs
- _____ writing was large, legible, easily readable from 3 feet away
- _____ design did not detract from or overwhelm the message; graphics did not overwhelm the message
- _____ materials were free from grammatical, spelling and punctuation errors
- _____ clear objectives/hypothesis statement
- _____ contained all the components (title, intro, methods, results, discussion and conclusions, literature) commonly used in scientific writing in a design that flowed well
- _____ easy to navigate around the poster, find parts,

Points for Poster Presentation

Content (40) _____

Oral Communication Skills (30) _____

Supporting Materials (30) _____

Total Points (100 possible) _____

Permission to Publish

Portions or all of a senior thesis may be published by the student and his/her advisor along with committee members and others who contributed substantially to the creative work. Student authors will receive full credit and/or acknowledgement for all of their creative work. The student shall be first author of any published work resulting from the thesis unless substantial rewriting is necessary and/or additional original data are added to the point where the student is no longer the primary contributor to the publication. Selected abstracts will be published by the School of Natural Resources and Extension. Students will be sole author of abstracts, but the mentor and other input will be acknowledged.

In order to facilitate the dissemination of information from student theses, students will bring a flash drive of their thesis to the main office in 303 O'Neill. By signing this form, the student gives permission for publication of abstracts and use of the thesis (with proper citation) as a reference work. Formal publication of all or part of the thesis will require joint authorship with the thesis mentor and others, with full acknowledge of the student.

Please provide a good contact address and phone number (your own or a relative's or parent's address) in order to facilitate contact after you have graduated.

Name:

Contact email:

Contact Address:

Phone Number:

Signature: _____

Print this out, sign it and return to Cathy Donaldson in person or via email (cdonaldson@alaska.edu). It must be signed and returned or you will not get your final grade!

Abstract worksheet form

Describe your research project in a concise manner. The worksheet below allows you to order your thoughts and include all the information necessary for an informative abstract. Note: sections may be combined so that one sentence contains an introduction + methods, methods + hypothesis, etc.

Word limit = 150

Introduction (What is this project about? Use key terms to describe your project, but don't use citations):

Hypothesis or objectives (What is the specific question you wanted to answer?):

Methods (Very briefly explain how you fulfilled your objectives or tested your hypothesis. This section may be combined with introduction in the final abstract):

Results (What did you find when you conducted your experiment, survey, literature search, etc.):

Discussion and Conclusions (How did you interpret your results? What conclusions did you draw? Why are your findings important?):
