

## UNDERGRADUATE THESIS POLICY

### Natural Resources and Environmental Studies

Sept 2021

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#### INTRODUCTION

The Undergraduate Thesis provides an opportunity for students to independently gain experience by undertaking research in their area of interest. It allows students to integrate the abilities, skills, and knowledge acquired during undergraduate studies. It is open to students with 90 credit hours who are declared majors in a Program within the department of Ecosystem Science and Management. Individual Programs may create more specific academic requirements for students wishing to undertake a thesis (e.g. a minimum cumulative GPA of 2.67 or 3.00, or subject to supervisor availability). Working under the guidance of a faculty member, students design, execute and analyze research on an issue, problem or concept within their discipline. In certain circumstances, students may be provided with data that have already been collected, and will be required to write a more data-analysis focused thesis. This course is primarily intended for students contemplating graduate studies or pursuing a career in research.

As undergraduate theses are highly individual, the time commitment to the undergraduate thesis can not be precisely defined. Students bring different levels of experience, knowledge and abilities to problems that can vary widely in technical or philosophical difficulty. However, depending on the phase of the project, students should expect to spend up to 12-15 hours per week on this course. Similarly, the amount of time Thesis Supervisors need spend with each student will also fluctuate based on the individual student, thesis topic, and the phase of the thesis, with between 2-4 hours per week often necessary to provide the student with direction, deadlines, supervision, constructive criticism and praise.

Some undergraduate theses may be of such high quality that the student may wish to submit a paper for publication. Other theses may run into problems caused by such factors as equipment failure or climatic conditions. In this situation, students may still earn an A+ grade for their design and analysis for suggesting and testing alternative methodological approaches to the problem, and for the depth and breadth of understanding of the topic in question. A high grade does not necessarily depend upon the successful completion of the thesis proposal, but comes from a thorough intellectual and physical involvement in the thesis. In this case, the standard evaluation rubric will need to be adjusted. The undergraduate thesis in NRES will be worth six credit hours.

#### TOPIC SELECTION

Students are responsible for contacting one or more potential supervisors to act as a Thesis Supervisor. It is anticipated that students should contact potential Thesis Supervisors before the end of the Winter term at the end of their third year. Contact with potential supervisors **must** be made by the add/drop date of the academic term (normally the Fall term). After discussions with various faculty members, an arrangement with one faculty member to serve as a Thesis Supervisor should be made. The student, Thesis Supervisor, and the Chair of the Program must sign a form which names the student, proposed thesis topic, and Thesis Supervisor. It may be feasible, or even

desirable for some topics, for students to begin preliminary reading and planning through the summer months if the thesis topic can be adequately defined by this time.

## **THESIS SUPERVISION**

The Thesis Supervisor is responsible for the direction and instruction of the student, and will ensure that adequate time is spent with the student to allow for the successful completion of the thesis. However, as in all other courses, the student is ultimately responsible for their completion of course requirements. The Thesis Supervisor is responsible for evaluating the: a) thesis proposal and implementation of the research program; b) thesis; and c) student presentation.

A Second Reader will be required for all undergraduate theses as an external reader. The student and the Thesis Supervisor will share joint responsibility for selecting the Second Reader. The Second Reader will normally be a UNBC faculty member, and will probably come from the same Faculty, if not the same Program as the Thesis Supervisor - occasionally it may be best to have a member of the community as a Second Reader (e.g., a planner employed by the public sector or a member employed by the private sector). If the Second Reader is not a member of the UNBC faculty, then they are required to have a minimum of a Master's degree in the same or a closely related field as the thesis.

The Second Reader will be primarily responsible for reading and grading the final draft of the thesis. They are intended to be an arm's length reviewer. *Half of the final grade for the thesis and half of the grade for the thesis presentation will be provided by the Second Reader.* The Second Reader will normally receive the final thesis document no later than 2 weeks prior to the thesis presentation date.

If any problems arise between the student, Thesis supervisor or Second Reader, the Chair of the program (or the Associate Dean of NRES if the Thesis Supervisor is a Chair) will act as a mediator, ensuring that any differences are settled to allow the student to complete the thesis requirements.

## **GRADING CRITERIA**

As noted above, the Thesis Supervisor is responsible for evaluating the thesis proposal and implementation of the research, thesis, and student presentation. However, the Second Reader will provide thirty percent of the final grade. A rubric will be provided to the student upon signing the work agreement form, which will be used to evaluate the proposal and final thesis.

The grading criterion will be the following:

- a) 30% of the total grade will derive from the thesis proposal and the implementation of the research (Thesis supervisor and student must decide how the marks in these two categories will be allocated - proposal vs implementation).
- b) 10% of the total grade will be allocated to the effort and attitude the student shows during the course. This grade will also reflect innovation, strategy, and general conduct of the student during their research (Thesis Supervisor will allocate).
- c) 50% of the total grade will derive from the written thesis document (25% of which is evaluated by the Thesis Supervisor, and 25% by the Second Reader).
- d) 10% of the total grade will derive from the students' presentation of their thesis (5% from the

Thesis Supervisor and 5% from the Second Reader).

## **THESIS PROPOSAL**

The proposal should include the following:

- Title,
- Introduction of the proposed topic: context and rationale for the topic,
- Summary of main subtopics in the report,
- Specific objectives,
- Study design/ methods to be used, and anticipated obstacles with possible alternatives to pursue if obstacles are encountered, and,
- Citations from some of the literature that will be referenced in the thesis.

## **AGREEMENT FORM**

All final arrangements for the 430 progression should be mutually agreed upon by the student and Thesis Supervisor; the second reader should be consulted to ensure they are available for the final review. This agreement should be signed by the student, Thesis Supervisor, Second Reader, and Chair. This form must be signed as soon as possible, but at least by the end of the first term that the student started the thesis (normally the Fall term of the fourth year). A basic time line for the completion of the Thesis should also be included in this agreement (see Appendix I for a proposed copy of this form).

## **FORMAT AND TIMELINES FOR THESIS**

The specific formatting of undergraduate thesis, which includes citation style (e.g., APA, MLA), font style and size, margins, title page, table and figures style, etc., is a Programmatic decision. It is suggested that each Program that has a thesis requirement or option create their own formatting guide for students. This will ensure that both students and faculty are clear about the standards and styles required of the final thesis.

The Undergraduate Thesis will normally begin in the Fall term of the fourth year, and be completed by the end of the Winter term, at the end of the student's fourth year of studies (they are intended to be conducted over two semesters). In some disciplines it may be necessary to initiate the thesis in the student's third year of studies in order to make data collection during the summer possible. Additional arrangements as to starting and completion dates may be possible with the support of the Chair (or Associate Dean if the Thesis Supervisor is the Chair).

The recommended progression is as follows:

Semester 1: Proposal completion and evaluation by Supervisor at end of month 1; upon proposal acceptance, implementation of experiments; data collection and/or analysis of data.

Semester 2: Continuation of data collection and analysis; thesis writing, complete draft to Supervisor by mid-semester; final draft to Supervisor. Complete thesis draft to Second Reader 2 weeks prior to presentation. Presentation to be scheduled by department, within 3 weeks of last day of classes. Presentation scheduling should take into account exam period restrictions.

## **THESIS PRESENTATIONS**

Students will also be responsible for presenting a brief overview of their thesis topic, research findings, and implications of their research. The audience will include faculty and students (both Thesis students and other undergraduate and graduate students). Thesis Presentations will normally be scheduled near the end of the winter term. Thesis Presentations will likely be scheduled by the Thesis Supervisor, however Programs or the broader Faculty may choose to have all Thesis Students defend on a given day. The Presentation will comprise 10% of the students' total mark.

Thesis Presentations should follow the format of talks at Scientific Conferences. The presentation should be approximately 20 minutes outlining the background, methodology, results and implications of their Thesis work, to be followed by 10 minutes for questioning by the Thesis Supervisor, Second Reader, and public. Programs should decide and discuss what role questioning from the general audience will play in the Thesis Presentation. A standard evaluation rubric will be used to grade presentations and should be provided to the student well in advance of the presentation date.

## **COMPLETED THESIS DOCUMENTS**

Upon completion of the thesis presentation, the student has the opportunity to make final corrections to the thesis document, as provided by the Supervisor and/or the Second Reader. After the document is complete, the cover page should be signed by both the Supervisor and Second Reader and submitted electronically to the Ecosystem Science and Management/Natural Resources and Environmental Studies Administrative Assistant. The thesis will be filed with the department and will be a publicly available document.

## **FACULTY WORKLOAD**

As per the Collective Agreement, faculty will receive teaching workload credit for the thesis course, which will be determined through consultation with the Program Chair. Supervising undergraduate theses often requires more contact with students than a 'normal' course, and the contact is usually on a one-to-one basis. As noted earlier, the time spent on each student's thesis will vary: some students require a minimum of supervision, while others need constant direction and feedback; the former may require one hour, the latter eight hours per week. Also, by design, the material provided in a thesis is more detailed and complex than in other academic courses. This creates more work for the supervisor, but it also increases the reward to both the supervisor and student. Similarly, the presence of one-on-one supervision - rarely if ever encountered in a traditional undergraduate course - is extremely important both to the student and to the supervisor.

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## UNDERGRADUATE THESIS AGREEMENT FORM

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THIS AGREEMENT MUST BE COMPLETED AND APPROVED BY ALL SIGNATORIES.

#### STUDENT

Student Name: \_\_\_\_\_ UNBC ID #: \_\_\_\_\_

Address: \_\_\_\_\_ Phone: \_\_\_\_\_

Major: \_\_\_\_\_ Program: \_\_\_\_\_

Email: \_\_\_\_\_

#### THESIS SUPERVISOR

Name: \_\_\_\_\_ Phone #: \_\_\_\_\_

Program: \_\_\_\_\_ Room #: \_\_\_\_\_

E-mail: \_\_\_\_\_

#### CO-SUPERVISOR

Name: \_\_\_\_\_ Phone #: \_\_\_\_\_

Program: \_\_\_\_\_ Room #: \_\_\_\_\_

E-mail: \_\_\_\_\_

#### SECOND READER

Name: \_\_\_\_\_ Phone #: \_\_\_\_\_

Program: \_\_\_\_\_ Room #: \_\_\_\_\_

E-mail: \_\_\_\_\_

#### CHAIR

Name: \_\_\_\_\_ Phone #: \_\_\_\_\_

Program: \_\_\_\_\_ Room #: \_\_\_\_\_

E-mail: \_\_\_\_\_

**THESIS TITLE AND TOPIC**

Proposed Title: \_\_\_\_\_

Proposed Topic: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**DUE DATES**

Due Date of Thesis Proposal: \_\_\_\_\_

Due Date of Final Thesis: \_\_\_\_\_

Date of Thesis Presentation: \_\_\_\_\_

**SIGNATURES**

**As parties to this agreement, we accept the information and conditions stated on this form:**

Student Name: \_\_\_\_\_

Student Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Thesis Supervisor: \_\_\_\_\_

Supervisor Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Co-Supervisor: \_\_\_\_\_

Co-Supervisor Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Second Reader Name: \_\_\_\_\_

Second Reader Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Chair Name: \_\_\_\_\_

Chair Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**IF THERE ARE ANY MAJOR CHANGES TO THE THESIS TOPIC OR DUE DATES, A NEW AGREEMENT FORM MUST BE COMPLETED**



**NRES 430 Undergraduate Thesis  
Marking Guide – 2021**

**Student's  
Name:** \_\_\_\_\_

**1.0 Thesis Proposal & Project Implementation**

**(Maximum = 30)**

	<b>Grade</b>	<b>Comments</b>
Solid rationale provided for proposed topic		
Well organized and written		
Objectives and Hypotheses or Research Question are clear		
Demonstrates understanding of study design, proposed methods are appropriate; research design supported by literature		
Student demonstrated keen understanding and excellence in project execution		
Student worked independently and successfully completed the project as required		
<b>Sub-total</b>		

**2.0 Effort and Attitude**

**(Maximum = 10)**

Student maintained a positive attitude and work ethic throughout		
Student exceeded expectations with regard to innovation, professionalism, or other merit		

**3.0 Report (Maximum = 50)**

**3.1 Content (Maximum = 40)**

**Abstract (2)**

Adequate summary of report

**Introduction (10)**

Provided clear rationale for problem

Clear, specific and concise purpose and objectives

Review of Literature

**Methods (5)**

Appropriate to address question and, if applicable, repeatable

**Results, Analysis and Discussion (18)**

Appropriate and useful presentation of results (e.g., stats, graphs and tables for quantitative projects and thick description for qualitative projects)

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Well organized, built an argument		
Comprehensive, integrated info from several sources		
Discussion reflected but did not repeat results/analyses		
<b>Conclusions and Recommendations (5)</b>		
Presented clearly		
Reasonable and useful		
<b>Sub-total</b>		

**3.2 Format and Style (Maximum = 10)**

Report was well organized with appropriate headings		
Proper grammar, punctuation and spelling were correct		
Literature was cited properly and consistently		
Figure captions and table titles were clear		
<b>Sub-total</b>		

Marker Signature (include name and date):

<b>Grade Calculation for Report</b>	<b>Maximum</b>	<b>Supervisor</b>	<b>Second Reader</b>	<b>Averaged Totals</b>
<b>Report Sub-Total</b>	<b>50</b>			
<b>Proposal and Implementation Sub-Total</b>	<b>30</b>		N/A	
<b>Effort/Attitude</b>	<b>10</b>		N/A	
<b>Presentation</b>	<b>10</b>			
<b>TOTAL</b>	<b>Out of 100</b>			

Written comments may be made on the reverse of this page. Thank You.