SENIOR THESIS SYLLABUS AND SURVIVAL GUIDE

The Senior Thesis or Project is a hallmark of the Conservation Biology program- and is still a requirement for some students in the newer Ecology degrees (those who are on the old catalog) While most of the requirements of this or any degree are accomplished in traditional classroom, lab, and field trip settings, the Conservation Biology Senior Thesis or Project takes students on a journey of independent inquiry and hands-on learning. Besides being an excellent intellectual experience, we believe that your Senior Experience will give you a better grasp of scientific principles and methods, make your degree more appealing to potential employers, and prepare you for grad school if you choose that route.

This guide provides a timeline, with a list of key benchmarks for completing the thesis. It addresses a set of frequently asked questions. Note- in particular- the standards for evaluation. There are rigorous standards for successful completion of the thesis, and a series of time-specific benchmarks that must be met. Your advisor, thesis mentor, and the program director are available to help you with this process. It is ultimately your responsibility to understand and meet requirements. Students have experienced delayed graduation through not understanding or taking thesis standards seriously. Please review this document thoroughly.

Senior Thesis: Timeline, and Key Requirements

Anytime before registering for 485/497

- Attend at least one thesis presentation session (fall or spring)

Junior year (or earlier!!!!)

- Contact mentor
- Begin discussing and reading about topic.

Spring Semester, Junior year

- Work with a faculty mentor to develop your thesis or project design
- Register for 1 credit of 485 or 497
- Prepare your proposal presentation to your mentor for review **at least two weeks before presentation**, and obtain your advisor's signature on a form stating that you're ready to present (forms are available in the Fish and Wildlife main office, or from David in CNR 105G)
- Present the proposal at the Spring Conservation Biology/Ecology session (poster or power point) (April)
- Write a formal version of your proposal and submit to your mentor *(timeline negotiable according to mentor's needs)*

Summer: between Junior and Senior Year

- Register for 1-2 credits of 485-497
- Conduct data gathering or project implementation**,** Analyze data or complete project

Fall Semester, Senior Year

- Analyze data or complete project
- Register for 1 credit of 485-497 (only if 3 credits have not already been taken)

Spring Semester, Senior Year

- Register for 1 credit of 473 (note- 473 serves as your 'senior experience' class for Conservation Biology)
- Prepare your presentation results (power point- or optionally a poster if desirable) and submit to your mentor for review at least two weeks before presentation. Obtain your mentor's signature on a form stating that you're ready to present (forms are available from Student Services)

- Present results of senior experience at the Spring Conservation Biology poster session (April)
- Write up your thesis research results or project completion report, submit to your mentor *(timeline negotiable according to mentor's needs- but must be before graduation)*

- **Senior Thesis: FAQ**

Q1: How will my thesis project be evaluated?
Q2: What the heck is the difference between a thesis and a project?
Q3: How should I find a project?
Q4: Do I have to follow the exact timeline given above?
Q5: When do I have to register for thesis/project credits?
Q6: How much work is involved in the thesis/project?
Q7: What happens if I present a proposal, and then my thesis or project changes later?
Q8: Does my mentor have to be Conservation Biology/Ecology faculty?
Q9: Do I have to present my proposal before I do my research?
Q10: How will I pay for this?
Q11: What should be included in my proposal?
Q12: What should be included in my final presentation?
Q13: What if I plan to be elsewhere during the scheduled poster or final presentation session?
Q14: When do the proposal and final presentation sessions take place?

Q1: How will my project or thesis be evaluated: Open Presentations?

A: Your proposal and final presentation will be evaluated by a faculty panel, and by your Conservation Biology or Ecology mentor. During your presentation, you will be graded using a rubric (see below). Note that we hold presenters to a professional standard. You must meet the following criteria to pass.

Proposal level
- Overall average score of '2.5' or higher on the rubric
- No average score for any single category falling below 2
- Approval of faculty mentor

Final presentation level
- Overall average score of '3 or higher on the rubric
- No average score for any single category falling at or below 2.5
- Approval of faculty mentor

If the student fails to pass at either stage (proposal or final presentation) then the Conservation Biology thesis committee will work with the student's mentor to draft a set of criteria for moving forward. These criteria may include additional analyses or an additional presentation. We will try to make this process transparent and fair, but it is IMPERATIVE that you communicate with your mentor regularly to ensure that you're meeting expectations.

As communicated above, deviations from your proposal should be communicated to your mentor and to the Conservation Biology director (and thus to the CB thesis committee) as soon as possible.

You are NOT guaranteed a passing grade for your thesis. The thesis is a great opportunity for professional growth and development, but we do expect our students to strive for professional standards. Do not take this opportunity (and responsibility) lightly.

There are several other benchmarks that must be met. These include:

1) Submit both your proposal and your final presentations to you mentor for review AT LEAST two weeks before you present.

2) Obtain your mentor's dated signature on a form stating that you're ready to present. your mentor's dated signature on a form. These are available from David Roon (droon@uidaho.edu) or in the main CNR office.

Q1b: How will my project or thesis be evaluated: Written Document?

You are responsible for generating two scientific documents- one at the proposal stage and one at the final presentation stage. These documents need to be submitted to your major professor. Your major professor will evaluate these documents (they will not be reviewed by anyone else).

The expectations for these reports will vary between different faculty mentors… but they are expected to be scientifically robust, with a solid grounding in the literature. You should share drafts and communicate regularly with your mentor as you do your writing. Your mentor will assign you a grade for your thesis work in large part based on the quality of these reports, so it's critical to agree about expectations. For a general list of what should be included in these reports, refer to ***Q11*** *and* ***Q12****.*

Q2: What the heck is the difference between a thesis and a project?

A: For a **thesis**, you should be conducting **original research and hypothesis testing** and collecting your own data.

In contrast, **projects** do not require original hypothesis testing and data collection. For a project, **you can synthesize existing information, conduct a meta-analysis, or otherwise use existing material to make an original creative contribution**. Examples of past projects include: creating a GIS database for Taylor Ranch, assessing key differences between Endangered Species Recovery plans. However, there are requirements common to both project and thesis options. These include:

- Full responsibility in choosing a topic and mentor
- A written proposal detailing rationale, objectives, methods, and timetable
- Defense of the proposed project at a spring poster session
- Completion of a scholarly work in consultation with your mentor
- Written thesis or project completion report
- Presentation of accomplishments at a spring poster session/celebration

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Q3: How should I find a project?

A: There are a number of approaches…

1. Review faculty working in Conservation Biology/Ecology, and do a little research into their interests. Then, approach people who are doing work that appeals to you. It definitely helps to be well-informed… faculty typically are not motivated to help people who just show up and ask 'so… what do you do?'
2. Check with your advisor for leads.
3. Review the list of available projects online (through the CNR web page)
4. Utilize an existing job or internship as an opportunity to develop a thesis project.
5. Develop a project in conjunction with a professional at another University or agency.

Q4: Do I have to follow the exact timeline given above?

A: No. The timeline is a guide only. It would be possible, for instance, to present your proposal earlier than your junior year. HOWEVER, the process should take roughly a year and a half to unfold, and should follow the proposal-research-presentation sequence. There's plenty of flexibility… but don't expect to cram things all into your senior year.

Q5: When do I have to register for thesis/project credits?

A: You need **three credits of 497/485** (thesis/project) and **one credit of 473** (thesis/project presentation). You need to be registered for 497/485 during the semester that you present your proposal. You need to be registered for 497/485 during the summer session (if that is when you do your research). You need to be registered for 473 during the semester when you present your final results.

Q6: How much work is involved in the thesis/project?

A: Three credits of 497 correspond to at least 135 hours of effort. This effort includes library work; writing, presentation and defense of the proposal; and the gathering and analysis of data. One credit of 473 constitutes at least 45 hours of work writing the thesis or project, and presenting the entire senior experience at an end-of-semester poster session. The program expects professional standards for your work- in fact, there have been several students who have published their thesis work in peer-reviewed journals.

Q7: What happens if I present a proposal, and then my thesis or project changes later?

A: This does happen- sometimes because your ideas change, sometimes because of the unpredictable character of field work. However, if your product is veering away from your proposal, you need to A) **talk with your mentor, and B) contact the Conservation Biology or Ecology director.** The director will consult with a panel of CB faculty. In most cases, changes will be allowed… but the committee may work with the student and their mentor to ensure that the altered product meets the benchmarks set by the program.

Q8: Does my mentor have to be Conservation Biology or Ecology faculty?

A: You should always have an CB/Ecology faculty member as a mentor… but the mentor's involvement can vary from project to project. For instance, you may choose to work with a researcher at another institution (or from another UI department)… in this case, your CB/Ecology mentor would work to ensure that you met program requirements, but the other researcher would be the primary supervisor for your actual research.

Q9: Do I have to present my proposal before I do my research?

A: In almost all cases, yes. The proposal is an opportunity for faculty to give feedback and critique a student's proposed research direction; students should not plan to do research first, and THEN present a 'proposal'. HOWEVER, we do recognize that there are some situations where it may be difficult for students to define their exact objectives early on in the process. Examples include- students who enter an REU (Research Experience for Undergraduates) program, or students who travel abroad, hoping to do research while out of the country. If you feel like the proposal timeline might be a problem, talk to the Conservation

Biology or Ecology director. Usually, students can be accommodated… but only if things are worked out ahead of time.

Q10: How will I pay for this?

A: There are- at this time- no funds expressly set aside for thesis research. Many of the projects available through CB/Ecology faculty WILL be fully funded, but this will vary. There are various grants and funding sources available for student research: some of these are listed on the CB/Ecology website, you can also talk to advisors, faculty for ideas. Note- there are always small-scale, regional research questions that can be evaluated without a huge budget, whereas shark-telemetry off Cape Horn may be a bit more prohibitive.

Two competitive research grant programs are worth special attention. The Student Grant Research Program (http://www.uro.uidaho.edu/sgp) provides excellent support to students with good ideas. Another excellent source of funding is provided by the Berklund Undergraduate Research Scholar Award (http://www.cnrhome.uidaho.edu/documents/2006%20Berklund%20Undergraduate%20Research%20Scholar%20Award.pdf?pid=97823&doc=1)

Q11: What should be included in my proposal?

A: Your proposal will be prepared as a written document (due 12th week of semester, submitted to and evaluated by your faculty mentor) using professional, technical writing standards. The following should be included:

- *Title page*
- Abstract
- *Introduction and background*
- *Research objectives*
- *Research activities and methods*
- Animal Care and Use Protocol Application (ACUC Application) and Human Subject Review Form (HAC Application) filled out if appropriate and ready to be assessed if the proposal is successful
- *Proposed data analysis approach*
- *Relevance of research to career goals and/or society*
- *Timetable (not to exceed 12 months)*
- Description of support provided by supervising faculty member (mentoring and/or matching financial support)
- *Literature references*
- Student vitae/resume
- Letter of support from supervising faculty member

You will also present this material as a power point presentation. You will have ~15 minutes (with questions) to present. The items in italics should be included.

Q12: What should be included in my final presentation?

A: Your final presentation will be prepared as a written document (submitted to faculty mentor- generally by 14th week but certainly before graduation) using professional, technical writing standards. The following should be included:

- Title page
- Abstract
- Introduction and background

- Research objectives
- Research methods
- Results and discussion
- Implications for management
- Conclusions
- Literature references

You will also present this material as a power point (or optionally as a poster). You will have 15-18 minutes to present, plus time for questions. All items listed above should be included. Your mentor will be able to advise you on power-point preparation or see the program director.

Q13: What if I plan to be elsewhere during the scheduled proposal or final presentation session?

We can accommodate remote presentations under special circumstances, but you should let us know well in advance.

Q14: When do the proposal and final presentation sessions take place?

There are two- generally in November/early December and April.

Conservation Biology proposal evaluation form

Student name: _____ Date: _____
Mentor name: _____
Evaluator name: _____

Key: 'Outstanding' = 'exceeds professional expectations', 'Excellent' = 'meets professional expectations', 'Good' = 'would need some improvement to meet professional standards', 'Fair' = 'would need considerable improvement to meet professional standards', 'Poor' = 'falls far below professional standards'

Background and Objectives are clear and justified				
Outstanding	Excellent	Good	Fair	Poor
Comments				
Proposed research activities and methods (including analyses) are clear and justified				
Outstanding	Excellent	Good	Fair	Poor
Comments				
Presentation quality (layout, design, communication skills)				
Outstanding	Excellent	Good	Fair	Poor
Comments				
Questions are addressed effectively				
Outstanding	Excellent	Good	Fair	Poor
Comments				
Overall evaluation				
Outstanding	Excellent	Good	Fair	Poor
Comments				

Conservation Biology final presentation evaluation form

Student name: _____ Date: _____
Mentor name: _____
Evaluator name: _____

Key: 'Outstanding' = 'exceeds professional expectations', 'Excellent' = 'meets professional expectations', 'Good' = 'would need some improvement to meet professional standards', 'Fair' = 'would need considerable improvement to meet professional standards', 'Poor' = 'falls far below professional standards'

Background, Objectives and Methods are clear and justified				
Outstanding	Excellent	Good	Fair	Poor
Comments				
Results and Discussion clear and justified				
Outstanding	Excellent	Good	Fair	Poor
Comments				
Presentation quality (layout, design, communication skills)				
Outstanding	Excellent	Good	Fair	Poor
Comments				
Questions are addressed effectively				
Outstanding	Excellent	Good	Fair	Poor
Comments				
Overall evaluation				
Outstanding	Excellent	Good	Fair	Poor
Comments				