

## FISH 498 SENIOR THESIS PROPOSAL Contact Hours

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**Time spent with the faculty mentor in individual instruction will vary depending on the student's progress on the thesis proposal; however, at least 80 hours of supervised scholarly activity most occur during the semester to complete a senior thesis proposal.**

### Course Prerequisites

Fisheries major with senior standing and a GPA of 3.2 or higher. Permission of a CFOS faculty mentor and the CFOS Internship Coordinator (the coordinator may also be a mentor). STAT 200, ENGL 414 (or an equivalent writing course). Recommended Courses: FISH 315 or 414, MSL 394 or 450, or STAT 401 or STAT 402.

### Course Description

Under the supervision and mentorship of a CFOS faculty member, students will complete the first part of a year-long, self-designed scholarly project that is the capstone of a student's exemplary academic performance in the Bachelor of Science in Fisheries and Ocean Sciences or Bachelor of Arts in Fisheries degree programs. For this component of senior thesis (FISH 498 Senior Thesis Proposal), the student will develop a proposal that will reflect a thorough understanding of the relevant and existing literature, study objectives and testable hypotheses, the methodology by which data will be collected through field and/or laboratory research, including data analyses, and a timeline by which the senior thesis will be completed. The student should also complete the collection of field and/or laboratory data and begin data analysis. A senior thesis project should be an original work that ideally makes a contribution to the fisheries and/or ocean sciences discipline.

Although not as broad in scope as a graduate research project, undergraduate research can serve as a launching pad to graduate school or a career in fisheries. Senior theses may stem from summer research experience as a student intern or take place entirely on campus in a fisheries or ocean sciences laboratory. Following the successful completion of this course, students will be allowed to enroll in FISH 499 Senior Thesis Project. Participation in this program will count towards the Experiential Learning requirement for either the CFOS B.S. or B.A. degree programs.

### Course Goal and Student Learning Objectives

Hands-on research provides undergraduate students with an opportunity to enrich their educational experience, accelerate their development as young professionals, and hone skills that are needed to complete graduate- and career-level research. To become familiar with the process of scientific inquiry, including research goal definition, the scientific method, technical write-up,

oral presentation of results, and publication of a manuscript, a senior thesis is an irreplaceable experience. The first part of the senior thesis experience, which will be completed in this course (FISH 498), will focus on developing a research idea, composing a proposal by which that research idea will be explored through the scientific method, collecting field and/or laboratory data, and initiating analysis of the collected data.

The entire senior thesis process will improve the ability of students to find employment and additional educational opportunity after their CFOS B.S. or B.A. degrees have been completed. Employers and prospective graduate schools value research experience because it demonstrates the ability of a student to successfully complete a large-scale project that requires analytical, critical thinking, and oral and written communication skills. Undergraduate students frequently develop close and long-term professional relationships with their research mentors, and the

- Month 1: Identification of a research topic, submission of a research pre-proposal, selection of CFOS faculty mentor, creation of project timeline, and initiation of the project literature review;
- Month 2: Completion of the literature review and submission of a complete research proposal;
- Month 3: Collection of field and/or laboratory data;
- Month 4: Compilation of data, data analysis, and submission of a progress report to the faculty mentor.

### Course Assignments

1. Timeline: The senior thesis timeline should provide major landmarks and deadlines for the entire duration of the senior thesis (both FISH 498 and FISH 499). This document will require contribution and confirmation from both the student and the faculty mentor.
2. Pre-proposal: The pre-proposal is a 1- to 2-page outline of the senior thesis that must be submitted to the faculty mentor and CFOS internship coordinator prior to enrolling for FISH 498. The pre-proposal should contain the project study goals and objectives, general methods to be used to address the study objectives, and expected outcomes.
3. Proposal: The proposal is a 10- to 15-page proposal of the research project to be conducted, including background information and justification, specific objectives and testable hypotheses, proposed methods, and data analysis approaches. The thesis timeline should also be included as part of this document.
4. Progress Reports: The progress report(s) should be submitted to the faculty mentor on a regular basis (to be determined at the time of timeline creation). The progress reports will detail progress in toward completing the literature review, proposal development, data collection and analysis, and manuscript development.

### Grading

**For senior thesis, failure to turn in any of the required assignments is grounds for a failing grade.** Because the senior thesis is based on the individual experience, a grading curve does not apply. Assignments are as follows (details for each assignment are listed above): timeline, pre-proposal, proposal, and data collection and analysis.

Letter Grade Breakdown: (1) Faculty Evaluation of Timeline Completion 10%; (2) Pre-Proposal 10%; (3) Progress Reports 20%; (4) Proposal 30%; and (5) Data Collection and Analysis 30%. All letter grades will be based on an absolute 90-80-70-60 scale (e.g., 90% = A, and so on).

### Course Policies

1. Late Assignments: All assignments are due to the faculty mentor by the dates indicated on the senior thesis timeline. If a student cannot turn in an assignment on time for a legitimate reason, it is the responsibility of the student to contact the faculty mentor (not the CFOS internship coordinator) prior to the date in question to not to receive a penalty.

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