

## PROPOSED SYLLABUS

### GEOL 3999

### Undergraduate Thesis in Geology

Semester: \_\_\_\_\_

Advisor: \_\_\_\_\_

**Course Objective:** The student, under the direction of a specified professorial faculty member, will become familiar with independent research associated with problems in the geological sciences. The student is expected to complete the research necessary to write a formal thesis, to present the thesis in a public oral presentation, and to defend the research to a faculty committee. Completion of the course and thesis will demonstrate the student's capacity for research, originality of thought and problem-solving skills, and ability to organize resources and materials.

**Prerequisites:** GEOL 3909; consent of Department; consent of professor

#### Enrollment Requirements:

- 1) The student, under the direction of a specified professorial faculty member who will serve as the Advisor, will continue to develop their independent research skills and experiences, continued from the research undertaken from previous study in GEOL 3909. The advisor must be a Full Member or Associate Member of the Graduate Faculty and either a full-time or adjunct member of the Department of Geology and Geophysics.
- 2) The student should submit an application, signed by the advisor, to the Department, so that a section of GEOL 3999 specific to that student can be created.
- 3) The student will write a thesis and present their research as a public, oral presentation. The presentation should be based on the thesis work accomplished by the student, and be approximately 20-30 minutes long. Questions may be asked from the public. Following the public presentation and question period, a closed session will follow in which only the student and the thesis committee (i.e. the thesis advisor and at least two additional faculty) are present. The student will defend the thesis to a committee, to the satisfaction of the committee.
- 4) A complete copy of the thesis, as it is to be defended, must be given to each committee member at least two weeks prior to the public defense. Two weeks public notice prior to the defense is required (e.g., posted flyers and email announcements).
- 5) The student must submit both an electronic and a paper copy of the thesis to the Department. The paper copy should contain hard copies of text and figures and appropriate supplementary material on CDs.

#### Enrollment Guidelines:

- 1) The advisor and student should discuss course objectives at the beginning of the semester, to include, but not be limited to:
  - a. The research proposal that outlines the research to be completed during the semester that will result in a completed written thesis; the proposal can include or be based on

- previous research findings from GEOL 3909.
- b. The identification and selection of two additional committee members for the thesis defense, with at least one being within the Department;
  - c. Clearly defined faculty expectations regarding time commitments and meetings that will be needed to complete specific tasks on the project(s);
  - d. Agreement on the type(s) of written record(s) of the research and outcomes (e.g., lab notebooks, reports, etc.);
  - e. Discussion about guidelines and requirements for the written thesis, oral public presentation of thesis research, and the defense of the research to the committee;
  - f. Discussion of other possible opportunities for encouraged outcomes, such as a student-first-authored abstract and presentation at a conference, submission and eventual acceptance of a peer-reviewed, student-first-authored publication.
- 2) In general, the undergraduate student should spend at least 3 hours conducting research activities for each hour of enrollment. It is recommended that the student record the time spent conducting research in a lab notebook.

**Course Grading:** GEOL 3999 is Pass/Fail. A pass is granted if not more than one dissenting vote is given by the members of the thesis committee. A passing student is expected to have conducted independent research that makes a significant contribution to a problem in the geological sciences. As such, the student demonstrated outstanding comprehension of the problem within a major research area, as well as proficiency in associated sub-disciplines. Where comprehension or individual skills might have been lacking, the student had noticeable personal growth during the research experience. The student provided consistent, deliberate effort throughout the semester without frequent pushing by the advisor. The delivery of the thesis and defense of the thesis were timely.