Capstone Project in Biological Sciences – Fall 2015 to Summer 2017

The guidelines below apply to all students who initiated a biological sciences capstone project Fall 2015 to Summer 2017. The two most important changes from the previous guidelines are as follows. (1) A student taking a capstone course must receive a passing grade on the capstone project itself, regardless of the course grade. In other words, a passing course grade will no longer ensure a passing grade on the capstone. (2) Students intending to complete a capstone, whether in a class or through individual study with a mentor, should register for BIOL F400. Details follow.

What is the capstone project requirement in Biological Sciences?
The intent of the Biological Sciences capstone project is to integrate knowledge and skills learned in previous courses, including scientific knowledge, quantitative literacy, and communication skills, and to apply these products of the university education to a creative activity. For a biologist, a fundamental expression of applied knowledge, creativity, and critical reasoning is to engage in scientific inquiry.

The capstone project in Biological Sciences consists of a mentored research project on a biological topic that is completed in the junior or senior year. The capstone project must be designed or chosen by the student in consultation with a faculty mentor. The faculty mentor must approve the project before work begins. The project must include evaluation of data and communication of the study intent, methods, results, interpretation, and conclusion in the context of existing literature and knowledge. All capstone projects will be assessed using a common set of expectations (see Final Evaluation of Capstone Project). The capstone project requirement may be met in two ways, detailed below.

How can I satisfy the capstone requirement?
First, a student may perform a capstone project within a designated capstone course in Biological Sciences or Wildlife Biology and Conservation. Capstone courses are offered across a range of sub-disciplines within biology. A list of capstone courses in Biological Sciences can be found in the UAF catalog. All capstone courses include the expectation that the student will complete a biological research project. Typically, the capstone course instructor will introduce one or several model study systems and methodologies that will form the basis for the student’s project. The course instructor will assist the student to design a study and analyze the results. The capstone project will include a major written assignment, which may be fulfilled as a research proposal and/or a final report formatted as a scientific paper. It is recommended that written assignments have a minimum length of 8 double-spaced pages (excluding figures and references) with at least 10 references. If a research proposal is used as the written assignment, students will also be required to communicate their research findings through an oral presentation, poster presentation, or final written report. The course instructor may require additional means of communicating the research results as well, such as an oral presentation or a poster. All projects will be assessed using the standard capstone project rubric. The capstone requirement will be fulfilled only if the capstone project is evaluated as adequate or better for all criteria identified on the Final Evaluation of Capstone Projects rubric. Thus, it is possible for a student to pass a capstone course without receiving credit for the capstone project, and to receive credit for the capstone project without passing the course. At the end of the semester, instructors will provide the Biology and Wildlife Department Chair with a copies of evaluation forms and written assignments, to be archived by the department.

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1 Revised 2 June 2014
Second, the student may satisfy the capstone requirement by conducting a research project with a faculty mentor, typically a member of the UAF Biology & Wildlife faculty. A student may receive course credits for the research project by enrolling in independent study (BIOL F397 or F497) or undergraduate biology research (BIOL F490 or URSA F488); however, course credits are not necessary for completion of the capstone project requirements. A more informal arrangement, in which the student performs a project and communicates the results under the supervision of a member of the Biology & Wildlife faculty, may satisfy the capstone requirements as well. The capstone project will culminate in a written report, formatted as a scientific paper. It is recommended that the report have a minimum length of 8 double-spaced pages with at least 10 references. Reports must be assessed by the research mentor using the standard assessment rubric, and must be evaluated as adequate or better for all criteria. The student or research mentor should provide to the Biology and Wildlife department a copy of the final paper and a copy of the Final Evaluation of the Capstone Project form, signed by the research mentor.

**Students intending to complete their capstone should register for BIOL F400**

Regardless of how the capstone project is completed, within a course or by working individually with a mentor, the student must signal his or her intent to complete the capstone project within a semester by enrolling in BIOL F400, Capstone Project. This is not a traditional course. It confers no credit and requires no additional work by the student. Rather, it is a way for the administration to track which student are in the process of completing their capstone projects, and which have successfully completed a project and therefore have satisfied the capstone requirement for graduation. Such a tracking system is necessary because the capstone can be completed in a variety of ways.

A capstone project might extend across several semesters, or an initial project may be abandoned in favor of a new one. In these cases, there is no need to register for BIOL F400 repeatedly. If the capstone project is not completed, or not completed satisfactorily, within a semester, the BIOL F400 grade will be deferred (DF grade) until a later semester. The DF will be changed to P when the student passes the capstone project. A DF grade will convert to an F only if it remains on the record for more than 3 years. This conversion can be prevented by request if the student can demonstrate she or he is actively working to complete the project.

Catalog description:

**BIOL 400 Capstone Project**
**0 Credits** Offered Fall and Spring

This course should be taken by students during the semester they initiate a capstone research project. The capstone project may be completed within a designated course or by working individually with a faculty mentor; see the Biological Sciences program description for more information. The duration of the capstone project may exceed one semester. **Prerequisites: Junior or senior standing.** (0+0)