The guidelines below apply to all students who will complete a biological sciences capstone project during Fall 2017 or later. The two most important changes to previous guidelines are as follows. (1) All students must deliver an oral presentation summarizing the content of their capstone project. (2) All students must prepare, in addition to the formal written report, a non-technical abstract describing the intent and outcome of the project. 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 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 requirements are:
1. The capstone project must be chosen by the student in consultation with a faculty mentor.
2. The faculty mentor must approve the project before work begins.
3. The project must include the evaluation of data. In most cases the student will collect an original data set, but working with an existing data set is also acceptable.
4. There must be three forms of communication.
   a. A formal written report in the style of a scientific paper.
   b. An oral presentation of the study goals and outcomes.
   c. A short, non-technical summary of the project goals and outcomes, written for the public.
All capstone projects are assessed using a common set of expectations (see Final Evaluation of Capstone Project).

Students pursuing a BA in Biological Sciences are encouraged to incorporate a consideration of social science and humanities into their capstone project.

How can I satisfy the capstone requirement?
The capstone project requirement may be met in one of two ways.

1. 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 subdisciplines within biology. A list of capstone courses in Biological Sciences may be found in the UAF catalog or the Biology and Wildlife Department website. 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 requirement within a course will be fulfilled only if the capstone project itself is evaluated as adequate or better for all criteria identified on the Final Evaluation of Capstone Projects rubric. It is expected that the capstone project will constitute only a portion of the course grade. **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.**

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1 Ratified by faculty April 2016
without passing the course. At the end of the semester, instructors will provide the Biology and Wildlife Department Chair with copies of the evaluation forms and the written assignments (the formal paper and the non-technical summary), to be archived by the department.

2. A student may satisfy the capstone requirement by conducting a research project individually 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 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. If the mentor is not a member of the Biology and Wildlife faculty, then an additional faculty evaluation completed by a faculty member in the Biology and Wildlife department will be necessary.

The required capstone requirements: more detail

1. Written report
All capstone projects must include a written assignment. This is typically a final report expressing the study goals, methods, and findings written as a scientific paper, but may in some cases be a research proposal. It is recommended that written assignments are a minimum 8 double-spaced pages (excluding figures and references) and contain at least 10 references.

2. Oral presentation
The findings of all capstone projects must also be communicated orally. Oral presentations can be delivered in class, at a scientific conference, at UAF Research Day, or in another instructor-approved setting. Slide presentations and poster presentations are the most common forms of oral presentation.

3. Non-Technical Summary
Communicating scientific results to the public is an important aspect of research. In addition to the formal written report, capstone research findings must be communicated in the form of a short, non-technical summary. The summary should consist of one or two paragraphs (1 page single spaced maximum) encapsulating the goal, approach, and findings of the study in language that could be understood by a non-scientist.

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. BIOL F400 is not a traditional course. It costs nothing, confers no credit, and requires no additional work on the part of the student. Rather, it is a way for the administration to track which students are in the process of completing their capstone projects, and which have successfully completed a project and therefore satisfied the capstone requirement for graduation. 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)

If you have questions, contact the Biological Sciences Undergraduate Program Chair (diane.wagner@alaska.edu).