Master of Science in Biological Sciences

The graduate program in biological sciences offers a research program of study leading to a Master of Science (MS). The MS has both a thesis and non-thesis option. The thesis option requires completion of a written thesis and public and private thesis defense resulting from research performed under the supervision of a UAA faculty member. The non-thesis option requires completion of a capstone under the supervision of a UAA faculty member and that the student pass a comprehensive written exam.

We recommend that prospective students review the program admission requirements, application deadlines for fall and spring admission, and program expectations, which are detailed on the UAA Department of Biological Sciences webpage (https://www.uaa.alaska.edu/academics/college-of-arts-and-sciences/departments/biological-sciences/). General guidelines for prospective students can also be found on the UAA Graduate School webpage (http://www.uaa.alaska.edu/graduateschool/prospective/).

Admission Requirements

- Complete the Admission Requirements for Graduate Degrees (https://catalog.uaa.alaska.edu/academicpoliciesprocesses/admissions/graduate/).
- Students must have a bachelor's degree in biology, chemistry or equivalent science as determined by the Graduate Affairs Committee.
- Applicants must have a minimum GPA of 3.00. Successful applicants ordinarily have no grade below a C in undergraduate science courses.
- Students seeking admission into the MS in Biological Sciences should follow the application guidelines detailed on the UAA Department of Biological Sciences webpage (https://www.uaa.alaska.edu/academics/college-of-arts-and-sciences/departments/biological-sciences/).

Accelerated MS in Biological Sciences Option

The Accelerated Master of Science in Biological Sciences option allows a maximum of twelve University of Alaska Anchorage credits of 400-level and/or 600-level coursework to double count toward the baccalaureate and master's degree. Courses must meet the graduation requirements detailed below. Students must receive a minimum grade of B in all 400-level courses, and a minimum grade of C in all 600-level courses, for the credits to count.

Students interested in pursuing an Accelerated MS in Biological Sciences option (for both thesis and non-thesis options) are encouraged to discuss the possibility with their prospective graduate advisor (see Admission Requirements detailed on the UAA Department of Biological Sciences webpage (https://www.uaa.alaska.edu/academics/college-of-arts-and-sciences/departments/biological-sciences/)).

In addition to the Admission Requirements listed above, the Accelerated MS in Biological Sciences option applicant must:

- Be currently enrolled at UAA.
- Have earned at least 24 credits at UAA.
- Have a minimum GPA of 3.00 in all coursework completed within the UA system.

Additionally, the letter of support from the prospective graduate advisor must detail and provide rationale for the course work that will be double counted toward the baccalaureate and master's degree.

The regular application deadlines apply for the Accelerated MS in Biological Sciences option.

Graduation Requirements (Thesis Option)

- Complete the General University Requirements for Graduate Degrees (https://catalog.uaa.alaska.edu/graduateprograms/degreerequirements/).
- Complete 30 credits of coursework approved in advance by the student's graduate study committee (GSC).
- Satisfactorily complete thesis research as detailed in a written thesis proposal and approved in advance by the student's GSC.
- Submit a written graduate thesis that has been approved by the GSC, departmental director, and deans of the College of Arts and Sciences and the Graduate School.
- Pass an oral thesis defense.
- Students must receive a minimum grade of B in all 400-level courses and a minimum grade of C in all 600-level courses, provided that the cumulative GPA does not drop below 3.00.
- Complete the following program requirements:

Code	Title	Credits
BIOL A601	Experimental Design and Statistics	3
BIOL A605	Graduate Proseminar in Sciences	2
BIOL A606	Advanced Analysis and Interpretation [1]	3
BIOL A692	Graduate Seminar	1
BIOL A698	Directed Research [2]	9
BIOL A699	Thesis [2]	3
600-level science electives (does not include BIOL A698, BIOL A698A or BIOL A699 credits)		9
Total		**30**

[1] *This requirement can be substituted with 3 credits of 600-level science elective credits (but not including BIOL A698, BIOL A698A or BIOL A699 credits) with the approval of student's graduate study committee if the student has sufficient other experience or coursework in statistical analysis.*

[2] *While additional credits can be taken, a maximum of 9 credits for BIOL A698 and 3 credits for BIOL A699 will apply towards the 30 credits required for the degree.*

A minimum of 30 credits is required for the degree.

Additional Requirements for Thesis-based MS in Biological Sciences

- Within the first semester of study, each student must select a graduate study committee (GSC) consisting of a minimum of three members (no more than five is recommended). Two of the three members must be full-time, tenure-track faculty in the Department of Biological Sciences. The committee chair will be the student's primary research advisor if that person is a full-time UAA faculty member. If the primary research advisor is an affiliate faculty member, the chair will be shared with a full-time UAA faculty member from the Department of Biological Sciences, and both will be designated as co-chairs. To be a co-chair, a non-UAA faculty member must have official affiliate status within the department.
- A student's GSC must meet at least once each year to review a student's progress. The annual report on student progress (available online from the Graduate School) must be completed by the student and committee, signed by the GSC, filed with the graduate affairs administrative assistant, and submitted to the UAA Graduate School no later than **May 15** for students who started the program in the summer or fall semesters or **December 15** for students who started the program in the spring semester. Failure to file annual progress reports will be taken as an indication of inadequate progress, and is grounds for probation and subsequent dismissal from the program.
- Each student must submit a graduate studies plan (GSP) by the end of the first semester of graduate work. The GSP formally establishes the specific program requirements that will, upon satisfactory completion, entitle the student to receive the graduate degree or certificate. This GSP must be approved by the student's graduate study committee and also by the department director and the dean of the Graduate School.
- All graduate students must remain in good standing throughout their program. At a minimum, students not in good standing will not be able to compete for teaching assistantships or be awarded tuition waivers from the department, college or Graduate School. Students not in good standing risk being placed on probation and/or removed from the program. In order to remain in good standing in the program, students must:
  - maintain a minimum cumulative GPA of 3.00 in all coursework listed on their GSP;
  - file a GSP by the end of their first semester in residence; and
  - file satisfactory progress reports during each year in residence.
- Within their first year in the program, each graduate student is required to submit a written thesis proposal that details the plan for the student's graduate work. This document is developed in consultation with the graduate advisor, and once prepared must be submitted and approved by the student's graduate study committee. A copy of the approved proposal shall be placed in the student's departmental file.
- Students will conduct the research outlined in the thesis proposal and present their results as a graduate thesis following guidelines provided by the Graduate School. This written thesis must be approved by the GSC, the director of the Department of Biological Sciences, the dean of the College of Arts and Sciences, and the dean of the Graduate School in order to be considered complete. No student shall graduate without completing a written thesis.
- Following submission of their thesis to their GSC, students must present a thesis defense seminar, which will be followed by a private meeting with their graduate study committee to finalize the defense. The student must successfully defend the thesis in order to graduate.

Graduation Requirements (Non-thesis Option)

- Complete the General University Requirements for Graduate Degrees (https://catalog.uaa.alaska.edu/graduateprograms/degreerequirements/).
- Complete 30 credits of coursework approved in the student's graduate study plan, as detailed below.
- Students must earn a minimum grade of B in all 400-level courses and a minimum grade of C in all 600-level courses, provided that the cumulative GPA does not drop below 3.00.
- Complete the following program requirements:

Code	Title	Credits
BIOL A601	Experimental Design and Statistics	3
BIOL A605	Graduate Proseminar in Sciences	2
BIOL A692	Graduate Seminar	1
BIOL A698A	Non-thesis Capstone Project [1]	6
600-level science electives (does not include BIOL A698, BIOL A698A or BIOL A699 credits)		15
ENGL A414	Research Writing [2]	3
Total		**30**

1 *While additional credits can be taken, a maximum of 6 credits for BIOL A698A will apply towards the 30 credits required for the degree.*

2 *An equivalent course can be substituted as approved by the student's graduate advisor.*

A minimum of 30 credits is required for the degree.

Additional Requirements for Non-thesis-based MS in Biological Sciences

- Within the first semester of study, each student must select a graduate advisor who is either a UAA faculty member or an individual eligible to be a UAA affiliate faculty member. If the primary advisor's main appointment is from outside the Department of Biological Sciences, there must be a co-advisor who is a full-time Department of Biological Sciences faculty member, and both will be designated as co-advisors.
- An annual report on student progress (available online from the Graduate School) must be completed by the student and advisor(s), filed with the graduate affairs administrative assistant, and submitted to the UAA Graduate School no later than **May 15** for students who started the program in the summer or fall semesters or **December 15** for students who started the program in the spring semester. Failure to file annual progress reports will be taken as an indication of inadequate progress, and is grounds for probation and subsequent dismissal from the program.

- Each student must submit a graduate studies plan (GSP) by the end of the first semester of graduate work. The GSP formally establishes the specific program requirements that will, upon satisfactory completion, entitle the student to receive the graduate degree or certificate. The GSP must be approved by the student's graduate advisor and also by the department director and the dean of the Graduate School.
- All graduate students must remain in good standing throughout their program. At a minimum, students not in good standing will not be able to compete for teaching assistantships or be awarded tuition waivers from the department, college or Graduate School. Students not in good standing risk being placed on probation and/or removed from the program. In order to remain in good standing in the program, students must:
  - maintain a minimum cumulative GPA of 3.00 in all coursework listed on their GSP;
  - file a GSP by the end of their first semester in residence; and
  - file satisfactory progress reports during each year in residence.
- Within their first year in the program, each graduate student is required to submit a written capstone proposal that details the plan for the student's graduate work. This document is developed in consultation with the graduate advisor. A copy of the approved proposal shall be placed in the student's departmental file.
- Students will conduct the work outlined in the capstone proposal and present their results in written format (in quality similar to a manuscript suitable for publication). No student shall graduate without completing a capstone written document.
- Students must orally present the results of their capstone in a context available to the department and university community.
- Students must pass a written comprehensive exam.

Program Student Learning Outcomes

Students graduating with a Master of Science in Biological Sciences:

- Have mastered the fundamental concepts of biology, including cell and molecular biology, genetics, physiology, evolution and ecology.
- Will have a working knowledge of the principles of scientific methodology, of the methods and technology of biological research, of quantitative analysis of scientific data, and will be capable of writing a publishable scientific paper.
- Will have a demonstrated mastery of at least one focus area within biology or biochemistry.
- Are prepared for a career in biological sciences or are prepared to pursue more advanced research opportunities.