



College of Engineering
UtahStateUniversity

Mechanical and
Aerospace Engineering

MAE

Graduate Student

Handbook

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MAE Graduate Degree Programs

- Aerospace Engineering MS, PhD
- Composite Materials and Structures MS
- Mechanical Engineering MS, PhD
- Space Systems Engineering MS

Master's degrees have three plan options

- Plan A - coursework and research culminating in a thesis.
- Plan B - coursework and a project culminating in a report.
- Plan C - coursework only.

Doctoral degrees have two options

- PhD beyond a Bachelor's
- PhD beyond a Master's

Student Classifications

- **Matriculated graduate student** has been accepted by the department and enrolled in classes.
- **Full-time status:**
 - Registered for nine or more graduate credits.
 - Registered for six or more graduate credits if employed as a graduate assistant for 15 hours or more per week.
 - Registered for 3 graduate credits* meeting one of the following:
 - All required coursework completed and only the research component of the degree remains.
 - The semester of final thesis or dissertation defense.
 - The last semester of coursework required on the student's program of study for Plan C students:
 - *Must have an approved [program of study](#) and the [full-time at 3 credits](#) form submitted.
 - International students must maintain full-time student status to satisfy visa requirements.
 - Students (international and domestic) are not required to register for the summer semester.

General Degree Requirements

- **Time limit for completion:**
 - Master's degree must be completed within six years.
 - Doctoral degree must be completed within eight years.
- **Coursework expires** after eight years: coursework must be revalidated after eight years. The student's committee will develop a plan of how the student will demonstrate their knowledge of the changes in the course material from when they took the class eight or more years ago to the present. The plan must be approved by the MAE graduate director and the Vice Provost of the School of Graduate Studies.
- **Continuous registration and leave of absence:**

The [continuous registration and leave of absence policies](#) are established by the School of Graduate Studies.
- **Notification of reactivation:** the Graduate School will notify students who do not maintain continuous registration in one of the ways listed on the leave of absence form. If, after this notice, the student still fails to register, the appropriate department will be notified and the student's records will be placed in an inactive file. Reactivation is not automatic. In some circumstances, students will be denied reactivation and are required to reapply. Current program requirements will need to be met for graduation. Reactivation fees will also be imposed, which are usually the same cost as the application fee. In addition, a student may also be required to pay continuing registration fees in arrears for the term(s) missed.
- **Grades:**
 - A **Cumulative GPA** of 3.0 is required for graduation.
 - **Low scholarship notification.** Students who fail to earn a GPA of 3.0 for a semester will:
 - 1) Be placed on probation and will receive a letter from the School of Graduate Studies and the MAE department.
 - 2) Be required to submit a plan, to avoid a GPA below 3.0 for future semesters and if necessary, how to bring up a cumulative GPA that dropped below a 3.0, for approval from their major professor and graduate program director.
 - 3) If the GPA falls below a 3.0 for two consecutive semesters, the MAE graduate director will discuss with the student's major professor/advisor if the student should be permitted to continue in the program or be terminated.
 - 4) If a student's GPA is below 3.0 for their final semester, the student may still graduate if the cumulative GPA is 3.0 or above. If the cumulative GPA falls below 3.0, the student will not graduate and will be required to take additional courses to bring the cumulative GPA up to a 3.0 or above.
 - **Deadlines on Incomplete Grades.** Incomplete grades must be converted to regular grades by the last day of class in the last semester of study.
 - Grades of C- or lower are not permitted on a program of study.

- **Course-Level Requirements:**
 - **Master's program of study:** Plan A, B and C are required to have at least 15 credits of 6000 level classes or above.
 - **Doctoral program of study:**
 - Beyond a BS are required to have at least 15 credits of 6000 level classes or above.
 - Beyond a MS can have at most 3 credits of 5000 level classes (Advanced Math class only).
 - Credits must be from courses on the program's approved course list found on the program's checklist of requirements. Courses not on the approved course list may be added to the program of study with written approval from the major professor to the graduate program coordinator.
 - Approval must be given from the graduate program director to register for more than 18 credits a semester.
 - **Audited classes** are not permitted on a program of study.
 - **Special topics courses** without a syllabus and structured meeting time, foreign languages, continuing graduate advisement, individual home study, military science, and courses numbered below 3000 are not permitted on a program of study.
 - **Transfer credits:** Twelve credits, that haven't been used towards a previous degree, can be transferred from a previous university to a USU program of study with written permission of the student's major professor/advisor to the graduate program coordinator.
 - **Concurrent master's degrees and concurrent master's-doctoral degrees:** A student can complete two master's degrees or a master's and doctoral degree at the same time with permission from the student's major professor/advisor, the department head and the School of Graduate Studies.
 - A maximum of nine credits can be shared between the two degrees.
 - A [concurrent form](#) must be submitted before completing 50% of the credits required for the first program.
 - **Exceptions to required coursework:**
 - Substitutes to the required coursework may be made with approval of the student's major professor/advisor.
 - An email from the student's major professor/advisor must be sent to the graduate program coordinator.
- **Residency Requirement:**
 - Master's: At least 24-semester credits for a master's degree must be from a student committee-approved and a School of Graduate Studies-approved program of study from Utah State University.
 - Doctoral: At least 33 semester credits for a doctoral degree must be taken from Utah State University and be part of a student committee-approved and a School of Graduate Studies-approved program of study. At least three semesters, two of which must be consecutive, of full-time registration in residence at Utah State University, is required.

- **Grace Semester:**
 - Is a semester to finish degree requirements:
 - Master's Plan A, Plan B and PhD programs: The grace semester is the semester directly after a student defends.
 - Master's Plan C programs: The semester after a student takes their last class is considered the grace semester.
 - **For domestic students:**
 - No registration is required.
 - No fees are assessed.
 - Domestic students will be charged a late completion fee of \$100 per semester beyond the grace semester until completion.
 - **For international students:**
 - Must register for USU 7777.
 - Fees include an Office of Global Engagement fee, insurance fee, and possible other fees. Check with the Office of Global Engagement.
 - Must stay registered until completion to meet visa requirements.
- **Transferring Plans or Programs:**
 - Students may change plan types or programs any time during their program by contacting the graduate program coordinator. Courses can be transferred to the new plan/program type as long as they are on the approved course list for the new plan/program.
 - Master's students can transfer to a doctoral program with approval from a major professor who is willing to sponsor them for the doctoral program.
 - Contact the graduate program coordinator to submit appropriate forms.

Graduate Assistantships for MS Plan A and PhD Programs

- **Graduate teaching assistantships/graduate instructors:**
 - Work no more than 20 hours/week as a teaching assistant. This does not include thesis/dissertation work.
 - Must complete USU 7920 before payment is processed.
 - International students must also complete IELI 7920.
- **Graduate research assistantships:**
 - Can be obtained by finding a faculty member with funding for a student who is willing to hire the student.
 - Require no more than 20 hours/week as a research assistant. This does not include thesis/dissertation work.
- **To remain eligible for an assistantship, tuition awards and waivers, the student must:**
 - Successfully complete and pass a background check.
 - Maintain a cumulative GPA of 3.0 or above.

- Maintain full-time matriculated status.
- Perform well in the assigned assistantship position.
- Doctoral students must pass the MAE PhD qualifying exams before the beginning of the third semester.

Program Requirements

- **MS Plan A Common Requirements:**

- 30 credits (minimum) required.
- 3 credits of an approved 5000-level (or above) math course.
- 6 credits of MAE 6970 thesis research.
- A maximum of 15 thesis credits applied toward a program of study.
- Students must complete the Responsible Conduct for Research [CIDI online course](#) before their proposal can be approved.
- **Thesis proposal** must be emailed to committee members for approval.
 - Committee members are given two weeks to review.
 - Must be approved six weeks before the student's final defense.
- Thesis must be submitted to committee members two weeks before defense.
- [Thesis must meet School of Graduate Studies and MAE department requirements.](#)
- **Defense** - oral presentation of the student's research to his/her supervisory committee, students and other invited guests.
 - Students must be registered for at least one credit the semester of the defense.
 - Must be scheduled 10 working days before the defense date.
 - All committee members must be present in person or remotely.
 - Scheduled for 1.5 hours.
 - Student's presentation should be 30-45 minutes.
 - Successful defense must be determined for graduation.
- Final thesis must be approved by:
 - All committee members.
 - Graduate program coordinator.
 - School of Graduate Studies.
 - Library.
- In-person attendance at 6 **MAE Research Seminar Series** presentations before graduating.
- Approval of **Academic forms** required for master's students by the School of Graduate Studies:
 - Supervisory Committee
 - Program of Study
 - Thesis Approval

- Appointment of Examination
 - Record of Examination
 - SGS and library review and approval
- **MS Plan A Program specific requirements:**
 - **Aerospace MS Plan A:**
 - 6 credits of Aerospace Engineering core courses (MAE 5500 and MAE 5560).
 - 15 credits of approved AERO technical electives:
 - 9 credits of 6000 level electives required.
 - **Mechanical MS Plan A:**
 - 12 credits of approved 6000-level (or above) MAE courses.
 - 9 credits of approved 5000-level (or above) MAE technical electives.
- **MS Plan B Common Requirements:**
 - 30 credits (minimum) required.
 - 3 credits of an approved 5000-level (or above) math course.
 - 3 credits of MAE 6950 design project.
 - **Project report proposal** must be emailed to committee members for approval.
 - Committee members are given two weeks to review.
 - Must be approved six weeks before the student's final defense.
 - Project report must be submitted to committee members two weeks before the defense date.
 - [Project report must meet MAE department requirements \(same as SGS\).](#)
 - **Defense:**
 - Students must be registered for at least one credit the semester of defense.
 - Must be scheduled 10 working days before the defense date.
 - All committee members must be present in person or remotely.
 - Scheduled for 1.5 hours.
 - Student's presentation should be 30-45 minutes.
 - Successful defense must be determined for graduation.
 - Final project report must be approved by:
 - All committee members.
 - Graduate program coordinator.

- Library.
- In-person attendance at 6 **MAE Research Seminar Series** presentations before graduating.
- Approval of **Academic forms** required for master's students by the School of Graduate Studies:
 - Supervisory Committee
 - Program of Study
 - Project Approval
 - Appointment of Examination
 - Record of Examination
 - Library review and approval
- **MS Plan B Program specific requirements:**
 - **Aerospace MS Plan B:**
 - 6 credits of Aerospace Engineering core courses (MAE 5500 and MAE 5560).
 - 18 credits of approved AERO technical electives:
 - 12 credits of 6000 level electives required.
 - **Mechanical MS Plan B:**
 - 12 credits of approved 6000-level (or above) MAE courses.
 - 12 credits of approved 5000-level (or above) MAE technical electives.
- **MS Plan C Common Requirements:**
 - 33 credits (minimum) required.
 - Approval of **Academic forms** required for master's students by the School of Graduate Studies:
 - Program of Study
- **MS Plan C Program specific requirements:**
 - **Aerospace MS Plan C:**
 - 6 credits of Aerospace Engineering core courses (MAE 5500 and MAE 5560).

- 24 credits of approved AERO technical electives:
 - 18 credits of 6000 level electives required.
 - 3 credits of an approved 5000-level (or above) math course.
- **Mechanical MS Plan C:**
 - 18 credits of approved 6000-level (or above) MAE courses.
 - 12 credits of approved 5000-level (or above) MAE technical electives.
 - 3 credits of an approved 5000-level (or above) math course.
 - **Composite Materials and Structures MS Plan C:**
 - 15 credits of COMP core courses.
 - 18 credits of approved COMP technical electives:
 - 9 credits of 6000 level electives required.
 - 3 credits can be any MAE course.
 - **Space Systems Engineering Plan C:**
 - 12 credits of Space core courses.
 - 21 credits of approved SPACE technical electives:
 - 15 credits of 6000 level electives required.
- **PhD Common Requirements:**
 - Students must complete the Responsible Conduct for Research [CIDI online course](#) before their proposal can be approved.
 - **3 PhD qualifying exams:**
 - The following is the qualifying exam schedule:
 - Students that join in August: 1st try in January, 2nd try in May. An August admit may elect to take the August exam.
 - Students that join in January: 1st try in May, 2nd try in August. A January admit may elect to take the January exam.
 - Students that join in May: 1st try in August, 2nd try in January. A May admit may elect to take the May exam.
 - All repeat attempts must be consecutive.
 - All three test times are for first time and repeat test takers.
 - Mathematics exam is required for all doctoral students.
 - Exams must be passed with a score of 80% or higher.

- **Summer Meeting:**
 - Doctoral students are required to meet with their committee members every summer to discuss their progress.
 - A majority of members must be present.
- A **Paper related to the dissertation**, with the student as the first author, must be submitted for publication in a refereed journal prior to scheduling the final defense.
- **Dissertation proposal defense:**
 - Proposal defense is required to be scheduled for the second summer meeting.
 - Dissertation proposal must be submitted to committee members two weeks before the proposal defense.
 - The proposal defense must be scheduled 10 working days before the defense date.
 - All committee members must be present in person or remotely.
 - Scheduled for 2 hours.
 - Student's presentation should be 45 minutes.
 - Successful proposal defense must be determined.
- **Dissertation defense:**
 - Dissertation must be submitted to committee members two weeks before defense.
 - [Dissertation must meet School of Graduate Studies and MAE department requirements.](#)
 - Students must be registered for at least one credit.
 - Must be scheduled 10 working days before the defense date.
 - All committee members must be present in person or remotely.
 - Scheduled for 2 hours.
 - Student's presentation should be 45-60 minutes.
 - Successful defense must be determined for graduation.
 - Final dissertation must be approved by:
 - All committee members.
 - Graduate program coordinator.
 - School of Graduate Studies.
 - Library.
- In-person attendance at 12 **MAE Research Seminar Series** presentations before graduating.
- Approval of **Academic forms** required for doctoral students by the School of Graduate Studies:
 - Supervisory Committee
 - Program of Study
 - Application for Candidacy
 - Appointment of Examination
 - Record of Examination
 - SGS and library review and approval

- **PhD beyond a Bachelor's program specific requirements:** 72 credits (minimum) required.
 - **Aerospace PhD beyond a Bachelor's:**
 - 6 credits of Aerospace Engineering core courses (MAE 5500 and MAE 5560).
 - The MAE 5500 core requirement can be satisfied by passing the Aerodynamics qualifying exam.
 - 24 credits of approved AERO technical electives:
 - At least 9 credits of 6000 level AERO electives.
 - 6 credits of an approved 5000-level (or above) math course.
 - 36 credits of MAE 7970 dissertation research.
 - **Mechanical PhD beyond a Bachelor's:**
 - 18 credits of approved 6000-level (or above) MAE courses.
 - 12 credits of approved 5000-level (or above) MAE technical electives.
 - 6 credits of an approved 5000-level (or above) math course.
 - 36 credits of MAE 7970 dissertation research.
- **PhD beyond a Master's program specific requirements:** 42 credits (minimum) required.
 - **Aerospace PhD beyond a Master's:**
 - 6 credits of Aerospace Engineering core courses (MAE 5500 and MAE 5560).
 - The MAE 5500 core requirement can be satisfied by passing the Aerodynamics qualifying exam.
 - 3 credits of approved 6000-level (or above) AERO technical electives.
 - 3 credits of an approved 5000-level (or above) math course.
 - 30 credits of MAE 7970 dissertation research.
 - **Mechanical PhD beyond a Master's:**
 - 9 credits of approved 6000-level (or above) MAE courses.
 - 3 credits of an approved 5000-level (or above) math course.
 - 30 credits of MAE 7970 dissertation research.

Graduation, Commencement and Diplomas

- [Deadline for Completion](#)
- **Graduation Paperwork:**
 - [Application for graduation](#) due the first month of the semester you intend to graduate.
 - Diploma fee of \$15.00.
- **USU offers one commencement** program annually at the end of spring semester.
- **Awarding of degrees** is performed by the School of Graduate Studies:
 - SGS is required to award degrees 45 days after the semester end date.
 - Check the transcript for proof that the degree was awarded.
- **Diplomas** are mailed by the Registrar's Office once all the degrees have been awarded:
 - Mailed 8-10 weeks after semester end date.
 - Name will appear as it is in the student database.
 - Mailed to address on Graduation Fee Payment form.

University Policies

- **Notice of Non-discrimination** in its programs and activities, including in admissions and employment, Utah State University does not discriminate or tolerate discrimination, including harassment, based on race, color, religion, sex, national origin, age, genetic information, sexual orientation, gender identity or expression, disability, status as a protected veteran, or any other status protected by University policy, Title IX, or any other federal, state, or local law. The following individuals have been designated to handle inquiries regarding the application of Title IX and its implementing regulations and/or USU's non-discrimination policies.

Executive Director of the Office of Equity and Interim Title IX Coordinator

Matt Pinner, JD

matthew.pinner@usu.edu

Old Main Rm. 161

435-797-1266

For further information regarding non-discrimination, please visit <https://equity.usu.edu/>, or contact:

U.S. Department of Education

Office of Assistant Secretary for Civil Rights

800-421-3481

OCR@ed.gov

U.S. Department of Education

Denver Regional Office

303-844-5695

OCR.Denver@ed.gov