



MAE
GRADUATE
STUDENT
HANDBOOK

NC STATE
UNIVERSITY

Mechanical and Aerospace
Engineering

MAE Graduate Program Handbook

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Last updated in June 2024.

Important Links

Key Graduate School Resources

- [Graduate Student Handbook](#)
- [Graduate School Forms](#)
- [Graduate School Milestone Timeline](#)

Courses

- [MAE Course Catalog](#)
- [Class search](#)
- [EOL Courses by Semester](#)

Academic Calendars

- [EOL Academic Calendar](#)
- [University Academic Calendar](#)
- [Graduate School Academic Calendar](#) (add to your Google Calendar)
- [ETD Deadlines](#)
- [Billing Calendar](#) (note registration deadlines and fines)

Academic Support

- [MAE Graduate Office](#)
- [Engineering Online](#)

Technical Support

- [MyPack Portal User Guide](#)
- [Student Information System Training Manual](#)

MAE GSA resources

- [Join the GSA](#)
- [Graduate School Survival Guide](#)

Frequently asked questions

- [Admission FAQs](#)
- [Advising FAQs](#)

Degree Requirements

Degree Audit

Your Graduate Degree Audit shows how the courses you've completed—and those you plan to take—fulfill your major requirements. Use the audit to track your progress, plan for future semesters, and view a summary of your credit hours and GPA.

Graduate Catalog listings for the programs

[Mechanical Engineering](#)

[Aerospace Engineering](#)

Degree summary

Note: The audit labels the credit bins using a 2-digit number, which may help orient you.

		CREDITS REQUIRED	
BIN	CATEGORY	MS	MS
		Non-thesis	Thesis
10	MAE 500- to 700- Level Graded Courses	18	12
20	Technical Electives - MAE or Non-MAE Graded Courses	9	9
30	Project (MAE586)	3	-
30	Research (MAE695)	-	9
TOTAL REQUIRED CREDITS		30	30

		CREDITS REQUIRED		
BIN	CATEGORY	PhD	PhD	PhD
		Direct	w/ Prior non-NCSU MS	w/ Prior NCSU MS (no gap)
10	700-Level Graded Courses	6	6	6
20	MAE 500- to 700- Level Graded Courses	18	6 + (12TR)	3 + (15TR)
30	Technical Electives - MAE or Non-MAE Graded Courses	15	9 + (6TR)	9 + (6TR)
40	Research MAE-895	24	24	24
50	Additional MAE credits	9	9	0 + (9TR)
TOTAL REQUIRED CREDITS		72	72*	72*

* This includes the transfer credits (TR)

Special notes:

Technical electives: All 5XX level courses in the College of Engineering, Math, or Statistics will be automatically approved. Others will need approval from the DGP. File a request [here](#).

MAE801: Seminar is required for PhD students but does not count toward the 72 credits.

ABM: The [Accelerated Bachelors/Master's \(ABM\)](#) degree program allows exceptional undergraduate students at NC State an opportunity to complete the requirements for both the Bachelor's and Master's degrees at an accelerated pace. These undergraduate students may double count up to 12 credits and obtain a non-thesis Master's degree in the same field within 12 months of completing the Bachelor's degree.

PhD (Direct): An en-route Master's (non-thesis) degree can be earned concurrently with the PhD. 10 of the graded courses from your PhD degree also fulfill the MS degree requirements. To meet the 72 credit requirement, additional credits can be applied in either graded courses or research credit categories if space allows in the degree audit. **If you want the en-route MS, please contact mae_gradoffice@ncsu.edu to apply to add the MS degree audit.**

PhD (prior MS): Up to 18 credits can be transferred (30 if prior MS is from NCSU **and there is no break between degrees**). Transferred credits count toward the 72 credit requirement. See the instructions for how to apply prior MS credits below. The prior credits should be applied as listed in the Degree Summary table above (noted as TR). For transfer courses that were NOT part of a prior awarded degree, contact the DGP.

MS: Only one 400-level non-MAE class can be included to count toward a MS degree.

Distance MS: GE 'A' Courses: If you are a GE Edison Scholar, your 2'A' courses will count toward your degree requirements. One will count as an MAE course and one will count as a non-MAE course (technical elective).

Detailed degree audit information

See information from the graduate school about [how to create and maintain your degree audit](#).

This degree audit is designed for students and chairs to understand whether their planned courses meet degree requirements, and will allow students to define their courses independently from when they identify their committee.

Note: Current students who started prior to the switch to Degree Audit may have a mismatch between bins and their existing plan. If you previously had an approved Plan of Work, Committee, or courses, those approvals will be honored even if they are not currently displaying correctly on the Audit. Please work with Dr. Saul to implement the needed exceptions. This includes a difference in the number of graded courses.

1) Check your degree planner: NC State's Graduate Planner tool allows you and your advisor to craft a plan for the classes you wish to take in the semesters leading up to your graduation. The planner can help outline your course load and browse availability for specific classes. <https://grad.ncsu.edu/students/degree-planning/graduate-planner-tool/>

2) Perform a degree audit: Your Graduate Degree Audit shows how the courses you've completed—as well as those you plan to take—fulfill your major requirements. Use the audit to track your progress, plan for future semesters, and view a summary of your credit hours and GPA. <https://grad.ncsu.edu/students/degree-planning/perform-degree-audit/>

Courses beyond the required credits will appear below the degree audit under **Additional Courses**. MAE 801 does not count toward the required credits for any degree. If you believe one of the listed courses should fulfill a credit requirement, you can enter a course move and it will be reviewed for approval by the DGP.

3) Apply your transfer credits and apply them to the correct categories: Students must initiate previous master's credit requests in MyPack and request prior NCSU credit. Student instructions for these processes can be found on these pages: [Previous Master's Credit](#) and [Prior NCSU Credit](#). Contact the DGP if you believe you have transfer credits that were NOT counted toward an awarded degree for more information on that process. Apply the 18 (or 30) prior MS credits as listed in the Degree Summary table above.

PhD students with prior credits should apply credits as indicated in the summary table

Note: Current students moving over to Degree Audit from the old Plan of Work system should apply credits to any available empty bins. It is not necessary to match exactly.

4) Set up your Committee:

Student instructions for building their committee can be found [here](#).

Any student with an approved plan of work should have had their committee converted. Please confirm your approved committee is displaying correctly. If you had a member with a category of "external" or "technical consultant", they will show as "Conversion". This is ok.

Type	Name	Program	Graduate Faculty Status	Accept Committee Position?	Graduate School Representative	Accept GSR Position?
Chair	[REDACTED]	Aerospace Engineering	Grad Fac	Accepted		>
Member	[REDACTED]	Aerospace Engineering	Grad Fac	Accepted		>
Member	[REDACTED]	Aerospace Engineering	Grad Fac	Accepted		>
Member	[REDACTED]	Chemical Engineering	Grad Fac	Accepted	Yes	Accepted >
External	[REDACTED]	Conversion	Approved	Accepted		>

5) Initiate oral exams:

All students who will take oral exams must click a "schedule exam" button in their Committee page when they are ready to start that process. We have more information on that process for students [here](#). You will still complete the paper request form as well.

If you have any technical questions, please contact Dr. Saul.

Getting a Minor

A minor is allowed (but not required) for MS Thesis and PhD programs. It is not allowed for non-thesis MS programs.

The minor work will usually be from a single discipline or field that in the judgment of the advisory committee provides relevant support to the major field.

When a student selects a minor, the advisory committee must include a representative from the minor field. The minor credits on the Degree Audit must be approved by the graduate advisory committee member representing the minor, and, in some cases, the Director of Graduate Programs (DGP) from the minor program.

The technical elective courses in the MAE degree program can be used to count toward minor requirements. The specific minor requirements vary by minor program.

Degree audit: There is a button that looks like a plus sign in the planner to Add a Minor. This will create a new audit for the minor requirements.

Learn more: <https://catalog.ncsu.edu/graduate/graduate-handbook/co-majors-minors/>

Switching from MS non-thesis to MS thesis

MS students are all enrolled in the non-thesis track. Students who wish to move into the thesis track must meet the following eligibility requirements and complete the process for application. **Please complete this around the end of Year 1 or as soon as you meet the requirements.**

Eligibility:

- Academic good standing
- Identified faculty advisor

Process:

- 1) Submit a request to the MAE Graduate Office using the [online intake](#) (submission button is also available on the website).

Switching from MS to PhD (or continuing from MS to PhD)

Students who wish to move from the MAE MS directly into the PhD must meet the following eligibility requirements and complete the process for application along with their research mentor. **Consultation early with the DGP or MAE Graduate Office is strongly encouraged.**

Eligibility:

- Academic good standing
- Identified faculty advisor
- RA (or RA/TA startup) commitment from faculty member (no student will be switched without funding commitment)

Process:

- 2) Submit Change of Degree form (see [Graduate School Forms](#)) to MAE Graduate Office (DGP signature will be obtained by Grad Office) using the [online intake](#) (submission button is also available on the website).
- 3) If international: In addition to the NCSU Change of Degree Form, submit OIS change of degree form to MAE Graduate Office (DGP signature will be obtained by Grad Office)
- 4) The faculty member must submit a request to the MAE Graduate Office to create an RA Offer Letter to document the financial support for the student.

NOTE: If you plan to continue from the MS to PhD, there must be no break in enrollment in order to carry forward 30 credits from the MS to the PhD requirement. If there is any break in enrollment, only 18 credits can be carried forward.

Graduation

In your final semester, follow the following steps to graduate.

- Check that your degree audit is up to date, shows all green checks, and has no outstanding grades (e.g. IN)
- Your GPA must be over 3.0 (cumulative)
- Apply to Graduate by the [application deadline](#) (earlier than you think!!). Note these deadlines apply for non-thesis and thesis/dissertation students. Select the following: Student Self Service > Degree Progress/Graduation > Apply for Graduation. Follow the prompts. **Note: Direct-to-PhD students earning an en route MS must apply to graduate for the MS degree for it to be conferred. This can be done as soon as you have taken 30 graded credit hours that are applied to your MS degree audit.**
- Information about the Commencement ceremonies is available [here](#).
- Do you need a **Letter of Completion** showing you have met all degree requirements? [Follow the instructions to request one from the Graduate School.](#)

Enrollment & Credit Hour Requirements

All students are required to maintain *Full-Time Enrollment*

- **Full-Time Enrollment:** 9 to 15 credit hours per semester (recommended: 9-12 credits)
- **Census Day (the 10th day of classes each semester):** **Must be ENROLLED and may not drop classes below full time AFTER Census Day.** lose their eligibility for student loans, international students will be out of compliance with their visa requirements, and all students lose eligibility for the Graduate Student Support Plan (GSSP).
- **EXCEPTION: Distance** students are not required to maintain full-time enrollment (9 credit hours). However, students who are not registered as full-time students by Census Day (10th day of classes each semester) lose eligibility for student loans.
- Read more: [section 3.14B Requirements for Full/Half-Time Registration](#)

All students are required to maintain *Continuous Enrollment*

- Continuous Enrollment means there is no break in your enrollment/registration. If you have a break in your enrollment you will need to re-apply to the program.
- Leave of Absence for up to two (2) semesters during your academic career at NCSU.
- Read more: [section 3.14A Requirements of Continuous Enrollment](#)

Summer enrollment is not required (except Final Semester)

- **Summer PhD Preliminary Exam:** No registration needed.
- **Summer PhD or MS Final Exam:** Registration required (1 Credit, MAE696 or MAE 896, which is a 10-week summer session at a discounted price)

Final semester enrollment

If you have completed all credit hour requirements for the PhD, including research credits and the Oral Preliminary Exam, you can register three (3) credit hours of MAE 899 (Doctoral Dissertation Preparation) to maintain full-time status. In certain cases, **international students** who are in their last semester may file a Reduced Course Load form through OIS and register for one (1) credit hour. Please see the MAE Graduate Office if this applies to you. If you are eligible, this request must be made before the first day of classes of the requested semester.

Full-time Enrollment Waiver

Upon successful completion of 69 credit hours (PhD) or 27 (MS), students can receive a 3-credit hour full-time enrollment waiver. This means the student will be considered a full-time student when enrolled in just 3 credit hours. Once this waiver has been activated it will remain active through the completion of the program.

Enrollment limits

[There are time and credit limits to completing the program.](#)

PhD: 10 years, **MS:** 6 years

If you complete more than 150% of the required credits (PhD: 108 credits, MS: 45 credits), you may lose financial aid eligibility.

Academic Difficulties

The graduate school will place students who are not progressing satisfactorily towards the degree into one of three categories of academic difficulty at the end of the semester:

Academic Warning: students in this category have accumulated 18 or fewer credit hours and have less than a 3.0 GPA.

Academic Probation: students in this category have accumulated more than 18 credit hours and have a GPA in the range of 2.667 to 2.999.

Termination: students in this category have accumulated more than 18 credit hours and have a GPA below 2.667 or have accumulated 30 or more credit hours and have a GPA below 3.0.

Students on **warning or probation** may continue to enroll in courses, however there may be implications for eligibility for external financial aid or graduate appointments. Contact the financial source if you have questions about eligibility. Students who are **terminated** cannot enroll in courses. They may be reinstated by the Graduate School, provided the DGP can provide a justification for the performance and a plan to bring the GPA back up in the following semester to meet graduation requirements.

Contact the DGP **immediately** so that together you can create an action plan to improve your GPA and avoid future actions by the graduate school. The earlier you put together the action plan and submit to the graduate school, the more likely you will graduate.

Read more in the University Graduate Handbook: [section 3.19 Academic Difficulty](#)

Funding

General funding sources within MAE

Teaching Assistantship (TA): Reserved for PhD students only. Typically, TAs are assigned as part of an admission offer. Faculty advisors can also request a TA on behalf of a student for bridge funding. No more than 4 semesters of TA are permitted, but this amount is not guaranteed. These positions generally include GSSP and are paid as a monthly stipend.

Research Assistantship (RA): RAs are arranged between faculty and students directly. Typically a faculty member uses RAs with thesis MS and PhDs because they come from grant projects with expected research milestones. These positions generally include GSSP and are paid as a monthly stipend.

Fellowships: Typically reserved for PhD students. Internal university fellowships are generally assigned as part of an admission offer. Students are encouraged to apply for external fellowships such as NSF or NIH according to the guidelines of the funding agency. These positions are paid according to the specific guidelines of the award, which vary.

Graders: Faculty instructors are allocated grader hours according to their course enrollment. Faculty identify their own student employee for this role. This is an hourly position paid biweekly; there are no GSSP benefits. If there are faculty with whom you took a class or have a relationship with that you are especially interested in grading for, you might reach out to those faculty ahead of time.

External jobs: Students with an assistantship position should consult with their supervisor before accepting additional positions in or out of the university. Some positions have limitations on outside employment. All international students should consult with OIS regarding employment restrictions. There are limitations on job location and number of hours worked that are very important to adhere to.

GSSP eligibility and benefits

Benefits: <https://grad.ncsu.edu/student-funding/gssp-tuition-benefits/>

Eligibility: <https://grad.ncsu.edu/student-funding/gssp-eligibility/>

Note in particular:

- Students must have full-time enrollment
- Student must be on a TA or RA appointment to receive benefits
- There is no GSSP in the summer
- GSSP eligibility timeline continues whether or not a student is benefit eligible in a semester

Degree	# of Semesters
Master's	4
Doctoral with Previous Related Master's	8
Doctoral without Previous Related Master's	10

Research or conference travel

Before you plan to attend a conference/workshop, you need to ensure you have funding support from your research mentor.

Estimate your travel costs, including items such as your registration fee for the conference, airfare or ground transportation, and lodging.

1. Obtain the project account number from your advisor.
2. Complete an online travel authorization via MyPack Travel Center.
3. Arrange your travel. Attend your meeting. Be sure to keep detailed receipts.
4. Submit for reimbursement using MyPack Travel Center.

Travel support may be available from your specific project funds or professional society. In addition, on campus resources may support student travel.

- [Graduate Student Association](#)
- [Global One Health Academy](#)
- Department and College of Engineering: Funds are periodically available; watch for email and newsletter announcements
 - These funds are typically limited to one per lab per cycle, with a funding limit of half the travel amount, up to \$1000 cap. Students can typically be funded once in their career due to limited funds.

Research and Mentoring

Advisory Committee

The primary function of the committee is to advise the student in all aspects of the educational program and to monitor and evaluate progress toward and completion of the degree. The committee certifies whether the student has met NC State's standards for a graduate degree.

The [Statement of Mutual Understanding](#) and the [Positive Graduate Education Culture](#) guidelines outline the expectations for research mentor and student. The committee should also regularly meet with the student (ideally with regular progress meetings), consult on course selection, and support professional development. Changes to an approved committee can only be made by formal request to the Graduate School.

See more information from the graduate school about [how to create and update your advisory committee](#). Members should hold Graduate Faculty Status ([search here to see if someone holds this status and in what department](#)).

Note: MS Non-thesis does NOT need to complete a committee in the MyPack system.

Committee structure (minimum requirements indicated):

Program	MS Non-thesis	MS Thesis	PhD
Chair		Research mentor	Research mentor
Member		MAE graduate faculty	MAE graduate faculty
Member			MAE graduate faculty
Member		Any department	Any department
Minor Rep (if minor selected)		From minor program	From minor program
GSR*			Non MAE (see note)
External member			Optional (see note)

***Graduate School Representative:** A non-MAE graduate faculty member can fulfill the role of the GSR. If you do not have a non-MAE member, the Graduate School can assist in locating one. Consult with your Faculty Advisor about identifying a non-MAE graduate faculty member to serve as your GSR. Interinstitutional members, committee members representing your minor, and your Committee Chair/Co-Chair cannot not serve as a GSR.

External members: If the chair and student recommends the appointment of a committee member who is not an NC State graduate faculty member, it should be made clear to that person that he or she will be expected to participate as a full committee member. See the [Graduate Handbook](#) for further information on what is required.

Finding an advisor

PhD and MS Thesis students secure their own advisor; the advisor also serves as the Committee Chair. The graduate mentor is mutually agreed upon arrangement between the student and faculty member, typically after you arrive on campus. Typically students use their first semester to develop professional relationships with research faculty in their technical area.

Until a student identifies their research mentor, the Director of the Graduate Programs serves as advisor. Questions regarding graduate program requirements and Graduate School requirements should be directed to the MAE Graduate Office staff (mae_gradoffice@ncsu.edu).

MS Non-thesis students are advised by the Director of Graduate Programs throughout their academic career. Although a project mentor will supervise your MAE 586 project, the Director of Graduate Programs will remain your faculty advisor. See the section on MAE586 below for more information.

Graduate student-research mentor relationship and annual review

Graduate School Positive Graduate Education Culture

As reflected in the [University Mission](#), NC State values excellence, inclusion, integrity, sustainability, community, freedom, and collaboration. NC State strives to promote a collegial, respectful, and academically productive environment between graduate students, administration, faculty, and staff. To promote these aims and build and maintain a supportive culture, the University has enumerated [principles for a positive graduate education culture](#). Although this document is not a policy, regulation or rule of the University and is not legally binding, it is intended and aspires to provide a solid foundation from which students, faculty, and staff can effectively build a positive and supportive environment that reflects the University's values. It articulates a set of principles and approaches designed to promote effective and productive relationships among students, administration, faculty, and staff as well as to serve as a source of guidance and support.

[Review the Graduate Culture Principles](#). These principles align with several goals of the institution's strategic plan, Wolfpack 2030: Empowering the Extraordinary. In terms of direct impacts, these include: Goal 1: empowering students for a lifetime of success and impact, Goal 2: ensuring preeminence in research, scholarship, innovation and collaboration, Goal 4: championing a culture of equity, diversity, inclusion, belonging and well-being in all we do, and Goal 7: elevating the national and global reputation and visibility of NC State.

Annual PhD Student Activity Report (STAR)

MAE faculty members and students are expected to review student plans, research progress, and professional development every year. This Student Activity Report (STAR) will be submitted each spring to the Graduate Office to ensure timely student progress and meeting degree requirements. These records will also contribute to the annual graduate program assessment that is required by the university.

Process: Review the assessment prompts below, and record student activity and advisor feedback. Provide the responses to the MAE Director of Graduate Programs using the following [form](#).

Statement of Mutual Expectations

Department of Mechanical and Aerospace Engineering at North Carolina State University is comprised of outstanding graduate students and faculty who join together in a community of scholarship that values healthy interpersonal relationships and thrives in the context of open communication. To stimulate conversations that continue to ensure mutual understanding of positive laboratory cultures and establish reasonable expectations, the *MAE Graduate Student-Research Advisor Statement of Mutual Expectations* was created.

Process: Please review the documents below (for student and advisor) and record your understanding by indicating your acceptance in the Annual PhD Student Activity Report [form](#).

Annual STAR prompts

Review these questions and prepare responses. Students and their faculty research mentor should discuss. Answers will be entered in the [online sheet for annual review and program assessment](#). This is due each Fall after the 1st year.

Student Section:

- Student Name
- Faculty Supervisor
- ME or AE?
- Direct-to-PhD or Prior MS?
- Have you completed the Qualifying Exam?
- Have you completed the Preliminary Exam?
- Have you presented research at a local, regional, national, or international conference this year?
 - What conferences have you presented at? List citations.
- Have you published your work in professional journals this year?
 - What journals have you published in? List citations.
- Are you an active member of any professional organizations?
 - Which professional organizations are you a member of?
- Have you participated in any professional development activities this year?
 - What types of professional development have you participated in?
- Have you led or contributed to any proposals for grants or fellowships this year?
 - What funding agencies or fellowships have you submitted to?
- Have you received any awards this year?
 - What awards have you received?
- Briefly describe your research and professional development goals for the coming year. If there were any impediments in the prior year, please describe and discuss how you will overcome them in the future.
- Student acknowledgment of grad culture SME
- Upload your CV

Faculty section:

- Faculty acknowledgment of grad culture SME
- Brief faculty summary of student progress
- This student is making appropriate progress to degree: yes, no
 - If no, list corrective actions planned

Expectations of MAE Doctoral Research Advisors

Faculty who mentor MAE graduate students should commit the following to each PhD student in their group. Students and advisors should discuss and come to a mutual understanding of expectations.

- Take responsibility for creating and maintaining a safe and respectful work environment
 - Professional and respectful interactions
 - Student concerns taken seriously and addressed promptly
 - Adhere to applicable HR and University workplace policies (e.g. reporting)
- Have reasonable and flexible expectations for research time vs. personal time
 - Avoid demands for consistently excessive hours/day or days/week (incl. after-hours communication)
 - Typical schedules have reduced hours nights and weekends, some work off site
 - Mutually agreed upon vacation days, sick days, and holidays will be mutually agreed upon between the advisor and student
 - Accommodation for unusual external demands on time (e.g. family care, life events)
- Meet regularly with the student to discuss research and training progress
 - Frequency determined for each advisor-student pair; avoid frequent cancellations
- Be responsive to student requests for assistance, feedback, or information
 - Mutually agreed upon turnaround times for manuscript drafts, posters, or talk feedback
 - Facilitate access to training and resources necessary for the project
 - Responsive to email queries in one day unless out of the office
- Provide opportunities for professional growth and visibility
 - Speaking at departmental events, presenting at conferences, authorship opportunities, etc.
 - Opportunities are identified by the advisor and provided equitably
- Accommodate trainee time for long-term career development and professional skill building
- Accommodate degree requirements and schedules
 - Coursework, comprehensive exams, and other milestone requirements
- Keep students adequately and accurately informed of their standing
 - Any serious performance issues raised promptly with opportunity and guidance to correct them
 - Risks to student funding shared as far as possible in advance of any significant impacts
 - No termination from the lab without early notice and opportunity to address concerns

Students who feel that one or more of these expectations are routinely disregarded in a way that negatively impacts their research and academic progress or well-being can seek assistance and advice from program leaders. Those leaders include members of the doctoral committee, the MAE Director of Graduate Programs, the MAE Department Chair, the Graduate School, and [Student Ombuds Services](#).

I agree that I have met with the student and we have discussed our mutual expectations for the points listed above.

Advisor

Student

Expectations of MAE Doctoral Students

Faculty can reasonably expect the following from their MAE PhD students. Students and advisors should discuss these points and come to a mutual understanding of their expectations.

- **Contribute to a safe and respectful work environment**
 - Professional and respectful interactions
 - Work to resolve interpersonal issues that impact work and/or the work environment
 - Be familiar with and follow applicable university workplace policies
- **Manage time effectively and be considerate of other lab members' time**
 - Attend meetings prepared to actively participate in discussions
 - Give sufficient time to read and provide feedback on student work (abstracts/posters/papers)
 - Meet deadlines agreed to with colleagues and communicate unexpected delays promptly
 - Respect the need for others' personal time and others' work
- **Keep the advisor informed of hurdles, concerns, attendance, or issues that impact performance**
 - Proactively communicate about routine attendance issues such as vacations or missed meetings
 - Communicate about roadblocks in the lab that impact progress
 - Share concerns about the work environment which require the advisor's attention
- **Actively engage in their own training and in their long-term career development**
 - Discuss with the advisor to identify gaps in expertise, troubleshoot experiments and/or simulations, analyze data, develop scientific writing skills, and think about their project with increasing independence
 - Read the literature and apply it to their project
 - Be the principal driver of their own career development
 - Balance career development activities with research responsibilities in consultation with advisor
- **Keep the advisor updated about degree requirements and progress**
 - Students should be familiar with the requirements of their graduate program and keep their advisor informed of degree requirements and of the next steps for each milestone.
- **Regular attendance at scheduled lab and research meetings**
 - Minimize avoidable conflicts and missed meetings
- **Be responsive to advisor requests for feedback or information**
 - Check email on work days and respond to queries and requests in a reasonable time.
- **Consistently prioritize integrity and honesty**
 - Conduct experiments with rigor and report the results honestly
 - Follow recordkeeping practices established by the lab
 - Adhere to all established lab and safety protocols

Faculty who feel that one or more of these expectations are routinely disregarded in a way that negatively impacts research and academic progress or the well-being of the research group can seek assistance and advice from program leaders and [NCSU CARES](#). Those leaders include members of the doctoral committee, MAE Director of Graduate Programs, MAE Department Chair, Graduate School, and others.

I agree that I have met with the Advisor and we have discussed our mutual expectations for the points listed above.

Student

Advisor

Engineering Ethics and Appropriate Academic Conduct

Engineering has a direct impact on the quality of life. Being members of such a profession requires engineers to maintain high standards of ethical conduct. In general, the primary considerations of engineers should include the safety and well-being of all people and avoid all acts of deception. Engineers are required to be honest in all professional acts, credit those who are due, and avoid decisions based on personal and monetary gains.

- National Society of Professional Engineers [Code of Ethics](#)
- [University Student Conduct policies and expectations](#)
- [University Academic Integrity Overview](#)

In the Classroom

The classroom environment requires that both students and teachers conduct themselves in an honest and ethical manner.

- **Attendance** If you are an on-campus student, you are expected to attend in person class meetings/lecture. If you are a distance student, you are expected to watch all provided materials and videos. PhD students are expected to attend seminar in person.
- **Assignments and Tests** Adhere to the syllabus policies in the course, including those related to the expectations of the instructor with regard to collaboration on assignments. If you are unsure if collaboration is permitted, ask the instructor. Never plagiarize on tests and exams. On group assignments, do your share of work. Violation of course policies can result in an academic integrity violation and sanction up to and including expulsion.
- **Privacy and Confidentiality** Course material is provided for use in instruction for enrolled students. Students should respect the privacy of other students and the intellectual property of class materials by using materials for course use as intended.
- **Use of AI Tools:** You are expected to do your own work and cite any sources you use properly. You are not allowed to use any artificial intelligence (AI) tools, such as chatbots, text generators, paraphrasers, summarizers, or solvers, to complete any part of your assignments unless explicit permission is given by the instructor. Using AI tools without permission is considered a form of academic dishonesty. If you have any questions about what constitutes acceptable use of AI tools, please consult with the instructor before submitting your work.

In Research and Publishing

Academic integrity is key to appropriate conduct and dissemination of research.

- **Honest research conduct** Responsible conduct of research is expected. Adherence to safety protocols and institutional boards (e.g. IACUC, IRB) is expected. Falsification or fabrication of data is prohibited.
- **Acknowledgment of intellectual contributions** Cite all prior relevant work. Use your own words in writing and presentations. Acknowledge all contributors via acknowledgments or authorship, as appropriate to the level of contribution.
- **Gaining permission from copyright holders** If you are quoting something extensive or using a figure from another paper, it is essential to both cite and gain explicit permission from the copyright holder(s). This is usually the publisher. Permission will depend on the individual publisher's policies.
- **Use of AI Tools:** You are expected to do your own research and cite any sources you use properly. You are not allowed to use any artificial intelligence (AI) tools, such as chatbots, text or code generators, paraphrasers, summarizers, art generators or editors, or solvers, to complete any part of your research without explicit guidance from your supervisor. Using AI tools without permission can be considered a form of academic dishonesty or research misconduct. If you have any questions about what constitutes acceptable use of AI tools, please consult with your advisor before planning your work. You should also consult relevant research society and journal guidelines and codes of conduct regarding use of AI. **Review the [guidance for theses and dissertations](#) and statements required by the Graduate School regarding the use of AI tools (including Grammarly) prior to using any tools.**

Major Degree Benchmarks

PhD Qualifying Exam

For Direct to PhD students only

Timing: No later than the **third semester** that the student is enrolled.

Committee: A minimum of three MAE committee members (Chair and at least two Faculty).

Format:

- Each committee member will identify an appropriate question for the student's exam assignment on a topic relevant to their research area.
- Members should email their question, any instructions, and the expected completion date to the committee Chair, who will administer the exam.
- Each question response will be reviewed and approved by the member who submitted that question.
- Once all of the student's responses are approved, the committee Chair will submit the approved QE responses to the MAE Graduate Office.

All Qualifying Exam responses must be submitted at the same time by the faculty chair using the online [QE intake form](#).

PhD Preliminary Exam

The Preliminary Exam is a [Graduate School requirement](#).

Timing: After completion of all graded courses (as early as the 4th semester), before the end of the 4th year, and at least 4 months prior to the intended final defense date.

Committee: The full research advisory committee (minimum 4 members including the chair)

Format: There are two parts: Written and Oral. The written prelim exam must be completed, submitted to the committee, approved by the committee, and submitted to the MAE Graduate Office **before** formal request for the oral prelim exam can be submitted to the Graduate School.

- 1) **Written Preliminary Exam:** The preliminary written exam will take the form of a Dissertation Proposal. The proposal must be 5-6 pages in length and contain the following information:

Motivation; Methodology; Research objectives; Proposed work; Timeline; References

Dissertation proposals that do not follow the above guidelines will not be accepted. Here are some examples of the Dissertation Proposal you can use as a reference/guide: [Sample # 1](#) and [Sample # 2](#). Additionally, the [MIT Communication Lab](#) is a great resource you can use as a guide to create your Dissertation Proposal. Please note, while these sample proposals are good examples of content guidance, these samples were not written to the aforementioned departmental criteria. Some students and committees have used fellowship applications that the student developed and that meet these requirements to fulfill the written prelim requirement.

Approval: The Chair must submit the approved Written Prelim using the [Prelim intake form](#).

- 2) **Oral Preliminary Exam:** The oral preliminary exam includes a presentation by the candidate, questioning of the candidate, and a period of deliberation and discussion by the committee.

Schedule the Exam: 1) Verify the Degree Audit is up to date and approved. Push the Schedule Exam button. 2) Contact the receptionist in the MAE Front Office to reserve a room for your exam. 3) Submit the [Prelim Exam Request Form](#) using [the scheduling intake form](#) to the MAE Graduate Office at least 2 weeks **PRIOR** to desired exam date. The MAE Graduate Office will obtain the DGP signature.

NOTE: It can be very difficult to coordinate an exam time that works for all committee members. Plan the exam day and time well in advance of both the written prelim and submission of the exam request form to ensure all committee members are available.

Exam Approval: When the exam date is approved, the Chair will receive an email containing links to the Decision Form and the MAE Exam Rubric. Following the exam, the Chair and committee members must complete the online forms and rubric. Potential decisions are **Unconditional Pass, Conditional Pass, and Fail. Conditions** must be written clearly and submitted to the DGP and Graduate School. For a **fail**, only one re-examination will be allowed.

Remote exam: Oral examinations must be conducted with all members of the committee present, whether in person or remotely. The exam format is determined by the student and the chair/co-chair. Students can request an in-person exam. If the student opts for an in-person exam, at least the student, chair/co-chair, and Graduate School Representative (GSR) must be present on-campus. If a remote exam is selected, all members of the committee, regardless of role, will attend remotely. [Learn more](#) about these requirements.

PhD Final Examination (Final Defense)

The Final Exam is a [Graduate School requirement](#).

Timing: At least 4 months following an unconditional pass of the preliminary exam and before the [ETD Review Deadline](#) chosen by the student and committee.

Committee: The full research advisory committee, minimum 4 members

Format: The dissertation is an original contribution to the literature in the field of mechanical engineering or aerospace engineering. The final oral defense is the examination of the methodology used and the conclusions reached in the research performed by the candidate, as reported in the dissertation.

Complete your final dissertation draft: The dissertation should be reviewed with feedback by the chair and committee members periodically during the drafting of the document. The complete dissertation should be submitted to the full committee via email for official review no later than **2 weeks prior to the planned final exam** (defense).

Schedule the exam: 1) Verify the Degree Audit is up to date and approved. Push the Schedule Exam button. 2) Contact the receptionist in the MAE Front Office to reserve a room for your exam. 3) Submit the [Final Exam Request Form](#) using [the scheduling intake form](#) to the MAE Graduate Office at least 2 weeks **PRIOR** to the desired date. The MAE Graduate Office will obtain the DGP signature.

NOTE: It can be very difficult to coordinate an exam time that works for all committee members. Plan the exam day and time well in advance of both the written prelim and submission of the exam request form to ensure all committee members are available.

Remote exam: Oral examinations must be conducted with all members of the committee present, whether in person or remotely. The exam format is determined by the student and the chair/co-chair. Students can request an in-person exam. If the student opts for an in-person exam, at least the student, chair/co-chair, and Graduate School Representative (GSR) must be present on-campus. If a remote exam is selected, all members of the committee, regardless of role, will attend remotely. [Learn more](#) about these requirements.

Exam Approval: When the exam date is approved, the Chair will receive an email containing links to the Decision Form and the MAE Exam Rubric. Following the exam, the Chair and committee members must complete the online forms and rubric. Potential decisions are Unconditional **Pass**, **Conditional Pass**, and **Fail**. **Conditions** must be written in a clear and distinct way and submitted to the DGP and the Graduate School. For a **fail**, only a single re-examination will be allowed.

Apply to Graduate: In Mypack, no later than the Apply to Graduate Deadline

Submit the final dissertation: After receiving an Unconditional Pass Follow the [Electronic Thesis or Dissertation \(ETD\) process](#). The complete draft must be submitted to the ETD editor within **5 days after the exam AND before ETD deadline** (whichever is earlier). The editor will review your thesis then send you formatting corrections to be made. Upon completing formatting corrections, submit your final dissertation to the ETD by the **Final Error Free ETD Deadline**.

MS Final Examination (Final Defense)

The Final Exam is a [Graduate School requirement](#).

Timing: In your last semester and before the [ETD Review Deadline](#) chosen by the student and committee.

Committee: The full research advisory committee, minimum 3 members

Format: The thesis is an original contribution to the literature in the field of mechanical engineering or aerospace engineering. The final oral defense is the examination of the methodology used and the conclusions reached in the research performed by the candidate, as reported in the thesis.

Complete your final thesis draft: The dissertation should be reviewed with feedback by the chair and committee members periodically during the drafting of the document. The complete thesis should be submitted to the full committee via email for official review no later than **2 weeks prior to the planned final exam** (defense).

Schedule the exam: 1) Verify the Degree Audit is up to date and approved. Push the Schedule Exam button. 2) Contact the receptionist in the MAE Front Office to reserve a room for your exam. 3) Submit the [Final Exam Request Form](#) using [the scheduling intake form](#) to the MAE Graduate Office at least **2 weeks PRIOR** to the desired date. The MAE Graduate Office will obtain the DGP signature.

NOTE: It can be very difficult to coordinate an exam time that works for all committee members. Plan the exam day and time well in advance of both the written document and submission of the exam request form to ensure all committee members are available.

Remote exam: Oral examinations must be conducted with all members of the committee present, whether in person or remotely. The exam format is determined by the student and the chair/co-chair. Students can request an in-person exam. If the student opts for an in-person exam, at least the student, chair/co-chair, and Graduate School Representative (GSR) must be present on-campus. If a remote exam is selected, all members of the committee, regardless of role, will attend remotely. [Learn more](#) about these requirements.

Exam Approval: When the exam date is approved, the Chair will receive an email containing links to the Decision Form and the MAE Exam Rubric. Following the exam, the Chair and committee members must complete the online forms and rubric. Potential decisions are Unconditional **Pass, Conditional Pass, and Fail. Conditions** must be written in a clear and distinct way and submitted to the DGP and the Graduate School. For a **fail**, only a single re-examination will be allowed.

Apply to Graduate: In Mypack, no later than the Apply to Graduate Deadline

Submit the final thesis: After receiving an Unconditional Pass Follow the [Electronic Thesis or Dissertation \(ETD\) process](#). The complete draft must be submitted to the ETD editor within **5 days after the exam AND before ETD deadline** (whichever is earlier). The editor will review your thesis then send you formatting corrections to be made. Upon completing formatting corrections, submit your final dissertation to the ETD by the **Final Error Free ETD Deadline**.

MS Non-thesis MAE 586 Independent Project

MAE 586 is an independent project course with no formal lectures. Instead, students perform an analysis or experiment under a project advisor.

Course coordinator: Dr. Shadow Huang

Project mentor: Faculty member you identify

Enrollment: Contact the MAE Graduate Office Manager to be enrolled in the course for your final semester. You do not need to have an advisor or project identified to enroll. (Must have completed 18 credits)

Finding an advisor:

DE Students are typically assigned a project advisor after registering for the course, or can seek their own (see on campus suggestions below). Students will receive their Project Mentor details one week prior to the first day of class.

On-Campus Students should identify an MAE faculty member to serve as their Project Mentor the semester before they take the course. The MAE Graduate Office recommends students consult an MAE faculty member that shares their research interest to develop your own project idea. If necessary, the MAE 586 Course Coordinator (instructor of record) will help you secure an advisor or will serve in that capacity.

Project topic: We recommend identifying a willing faculty member working in a research area that interests you. If necessary, the **MAE586** course coordinator will help you secure an advisor or will serve in that capacity.

Milestones:

One-page project proposal that includes a description of the project and timeline of major tasks required to complete the project.

- Midterm report
- Final report

All milestones must be approved by the project mentor and submitted to the course coordinator via the course Moodle site.

For International Students

Here are some key points for international students. This is not comprehensive guidance. Please consult with OIS first if you have questions regarding allowable employment, key dates, and visa requirements.

On-Campus Employment for International Students

Academic Year (Fall, Spring) AND Summer (1st or final semester)

Limit: 20 hours/week of on-campus employment. This limit pertains to ALL work on campus, even across multiple jobs. International students who have on-campus employment are responsible for tracking work hours in WolfTime to ensure they do not exceed 20 hours/week.

Graduating Students: The ENTIRE 10-week summer term falls under this limit if you are graduating in the summer session. On-campus employment is not permitted in the no-registration deadline period without valid OPT authorization to work in your field of study.

WARNING: There is no flexibility to this 20 hours/week limit. Even if you work only one minute more than the 20 hours/week limit during the academic semester, you are in violation of your F-1 or J-1 status which may result in SEVIS termination.

Summer (continuing students)

Limit: You may work more than 20 hrs/ week between 05/04/2024 and 08/16/2024 subject to requirements below.

Requirements: You were enrolled in the prior Spring and are required to enroll in the following Fall. University human resource policies external to OIS may limit student employment to 29 hours per week, even during periods when full-time employment is permitted.

J-1 students need specific written employment authorization from their J-1 program sponsor at all times. Students whose program sponsor is NC State can request employment authorization in one year increments by submitting the J-1 Student Employment Authorization Request Form.

Any **off-campus employment** requires work authorization from OIS prior to engaging in the activity regardless of Summer being a vacation term or a required term.

If you have questions about employment and your status, please contact OIS.

Curricular Practical Training (CPT)

Curricular Practical Training (CPT) is a type of employment authorization for students in F-1 status that allows students to engage in off-campus employment* in their field of study when it is a required component of their curriculum, integral to their thesis or dissertation research (e.g., collecting data or testing hypotheses in a real world industry environment), or part of a co-operative education program in their field of study. CPT requires accompanying enrollment (which is why it is called Curricular Practical Training). **In MAE, the only method is co-op enrollment (COP 500 or COP 501), because it is not a required component for all students in the curriculum.**

Pay attention to key dates and apply early to ensure approval.

For more information on CPT eligibility requirements and how to apply:

<https://internationalservices.ncsu.edu/curricular-practical-training/>

Optional Practical Training (OPT)

Optional Practical Training (OPT) is a type of employment authorization for students in F-1 status who wish to engage in off-campus employment in their field of study during and/or after their course of study. No job offer is necessary to apply, but students must meet the eligibility requirements and obtain a new Form I-20 from OIS with an OPT recommendation before being able to apply. Once students have an OPT recommendation on their I-20, they submit their applications to the USCIS, and USCIS will issue an Employment Authorization Document (EAD) to the student. This EAD authorizes the student to engage in temporary employment in their major field of study for up to 12 months anywhere in the US. Most F-1 students at NC State University wish to take advantage of this benefit and will apply for their EAD **2 to 3 months before they graduate.**

Pay attention to key dates and apply early to ensure approval.

For more information on OPT eligibility requirements and how to apply:

<https://internationalservices.ncsu.edu/student-employment/optional-practical-training/>