

MAE PhD Program Student Guide

Hello Doctoral Students,

Included here is important information to help ensure you are meeting all of the requirements for the Mechanical and Aerospace Engineering PhD program. Please review this information, and if you have any follow up questions please email the MAE Graduate Office at mae_gradoffice@ncsu.edu.

Quick Guide to Resource Links Provided in this Guide

Quick links are provided here for quick access, but many of these links will make more sense after reading through the guide.

University Calendars - <https://studentservices.ncsu.edu/calendars/>

Graduate Student Handbook - <https://www.ncsu.edu/grad/handbook/index.php>

Graduate School Forms - <https://grad.ncsu.edu/faculty-and-staff/forms/>

MyPack Portal User Guide - <https://sis.emas.ncsu.edu/students/>

[Student Information System Training Manual](#)

- Creating a Plan of Work (pg. 4)
- Creating an Advisory Committee (pg. 7)
- Applying for Graduation (pg. 12)

[How to create a Plan of Work](#) (video)

ETD Deadlines & Information - <https://grad.ncsu.edu/students/etd/>

MAE Graduate Advising Website - <https://www.mae.ncsu.edu/academics/graduate-programs/graduate-advising/>

MAE Graduate FAQ - <https://www.mae.ncsu.edu/graduate-faqs/>

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Doctoral Degree Requirements

If you have a master's degree from NCSU & will not be pursuing a minor:

- Minimum GPA: 3.0
- Transfer Credits: You can transfer 30 credits from the MS degree to your PhD degree
- Graded Courses: You must have a minimum of 18 credits from graded courses
 - o Up to 2 courses (6 credits) can be from non-MAE courses approved by your advisor
- 700-level courses: If you joined our program in Fall 2016 or later, you must take at least two 700-level courses
- Research Credits: You must have a minimum of 24 credits of MAE 895
- Total Credits required is 72

If you have a master's degree from NCSU & will be pursuing a minor:

- Minimum GPA: 3.0
- Transfer Credits: You can transfer 30 credits from the MS degree to your PhD degree
- Graded Courses: You must have a minimum of 21 credits from graded courses
 - o Up to 3 courses (9 credits) can be from non-MAE courses approved by your advisor
- 700-level courses: If you joined our program in Fall 2016 or later, you must take at least two 700-level courses
- Research Credits: You must have a minimum of 24 credits of MAE 895
- Total Credits required is 75

If you have a master's degree from outside NCSU & will not be pursuing a minor:

- Minimum GPA: 3.0
- Transfer Credits: You can transfer 18 credits from the MS degree to your PhD degree
- Graded Courses: You must have a minimum of 18 credits from graded courses
 - o Up 2 courses (6 credits) can be from non-MAE courses approved by your advisor
- 700-level courses: If you joined our program in Fall 2016 or later, you must take at least two 700-level courses
- Research Credits: You must have a minimum of 36 credits of MAE 895
- Total Credits required is 72

If you have a master's degree from outside NCSU & will be pursuing a minor:

- Minimum GPA: 3.0
- Transfer Credits: You can transfer 18 credits from the MS degree to your PhD degree
- Graded Courses: You must have a minimum of 21 credits from graded courses
 - o Up to 3 courses (9 credits) can be from non-MAE courses approved by your advisor
- 700-level courses: If you joined our program in Fall 2016 or later, you must take at least two 700-level courses
- Research Credits: You must have a minimum of 33 credits of MAE 895
- Total Credits required is 72

Enrollment & Credit Hour Requirements

All students are required to maintain Full-Time Enrollment

- Full-Time Enrollment means you must take 9 to 15 credit hours per semester. The MAE Graduate Office recommends that students take no more than 9 credit hours per semester.
- Students who are not registered as full-time students by Census Day (the 10th day of classes each semester) 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).
- Read more in the Graduate Handbook: [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.
- It is possible to file a Leave of Absence for up to two (2) semesters during your academic career at NCSU.
- Read more in the Graduate Handbook: [section 3.14a Requirements of Continuous Enrollment](#)

Students are generally not expected to be enrolled for summer courses UNLESS you are scheduling your final exam/defense

- While you are not expected to be enrolled, there are often courses available.
- Students taking their PhD Preliminary exams over the summer are not required to be registered for courses.
- If you are scheduling final defenses/exams over the summer, including the summer-fall intersession, you are required to register for at least one credit in the summer term in which you defend. Generally, defending graduate students will register for 1 credit of MAE 696 or 896 which is a 10-week summer session at a discounted price.

Enrollment for your final semester before graduating

- If you have completed all of the credit hour requirements for your degree, including research credits and the Oral Preliminary Exam, but need to complete your research and/or writing and dissertation defense, you can register for a minimum of three (3) credit hours of MAE 899 (Doctoral Dissertation Preparation) to maintain full-time status.
 - This should only be done in the final semester and does not count toward your degree.
- In certain cases, international students who are in their very last semester may file a Reduced Course Load form through OIS and register for just one (1) credit hour. Please see the MAE Graduate Office if you feel this applies to you. If you are eligible, this request must be made before the first day of classes of the requested semester.

Plan of Work & Advisory Committee Explained

Plan of Work

The Graduate Plan of Work (PoW) is a document that serves both as a guide to successful degree completion and a contract between students and their programs. Your POW should include the minimum credit hour and course requirements specific to your degree. This plan serves to reduce the potential for misunderstandings about degree requirements and outlines the expected academic progress students should make. It should be viewed as a “living document” that can be reset and updated as students continue to develop and refine their academic programs.

Access your PoW in MyPack Portal by navigating to Student Homepage > Planning and Enrollment tile > Graduate Plan of Work > Plan of Work tab.

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. Thus, the committee must be active throughout students’ programs, beginning with helping students prepare their Plans of Work. The committee should provide an intellectually stimulating foundation for the student’s professional as well as scholarly development and should be sensitive to any difficulties in the student’s progress. The committee certifies whether the student has met NC State’s standards for a graduate degree. Advising and guiding the student on how best to fulfill the degree requirements is a critical element of this responsibility. Changes to an approved committee can only be made by formal request to the Graduate School.

Access your PoW in MyPack Portal by navigating to Student Homepage > Planning and Enrollment tile > Graduate Plan of Work > Committee tab.

Timeline for Creating your Plan of Work

Semester 1: create & save your Plan of Work in your MyPack Portal

- You cannot submit your PoW for approval without designating your committee members first.
- Search for your Faculty Advisor.

Semester 2: submit your Plan of Work for approval

- Identify your faculty advisor and consult with them about building your advisory committee.
- You MUST submit your PoW by the end of the second semester you are enrolled.

Continuously: review & save your Plan of Work

- The review and modification process can be done continuously, especially if the classes you take do not match your original Plan of Work.
- We recommend that you review your Plan of Work with your advisor at least once a year.
 - If revisions need to be made to your approved PoW, contact the MAE Graduate Office to have your plan reset so adjustments can be made.

Second-to-last Semester: your PoW musts have an Approved status

- Ensure your PoW is approved prior to scheduling the Final Exam.

Plan of Work & Advisory Committee Explained (continued)

Building Your Committee

The PhD Advisory Committee is comprised of at least 4 people:

- Chair – Your Faculty Advisor
- Three (3) Members
- A Graduate School Representative (GSR)

Your Chair is your Faculty Advisor, while the three Members should be graduate faculty members at NCSU. The GSR is a non-MAE graduate faculty member at NCSU and serves as an unbiased member to ensure your exams are conducted fairly. Consult with your Faculty Advisor about locating a non-MAE graduate faculty member at NCSU. If you are unable to find a GSR the Graduate School will assist you with locating one prior to approving your preliminary exam request.

Note: Interinstitutional members, committee members representing your minor, and your Committee Chair/Co-Chair are roles that cannot serve as a GSR. Advisory Committee requirements and guidelines are outlined in the Graduate Handbook ([section 3.2 Advisory Committee](#)).

The Plan of Work Approval Process:

- 1) Submit your PoWs through MyPack Portal (at the same time).
 - a. Remember, your Advisory Committee must be created to complete this step.
- 2) Each member will accept their role before reviewing your PoW for committee approval.
- 3) Once committee approval is complete, the DGP reviews your PoW for departmental approval
- 4) If the DGP approves your PoW, it is sent to the Graduate School for final approval.
- 5) Once the Graduate School approves your PoW you have met the PoW requirement!

Note: If at any time in the process your POW is denied, it will be sent back to you for modification. Once you make the necessary changes and re-submit your POW the process begins again.

Helpful Resource: [Student Information System Training Manual](#)

- Creating a Plan of Work (pg. 4)
- Creating an Advisory Committee (pg. 7)
- Applying for Graduation (pg. 12)

PhD Preliminary Examination

The Preliminary Exam is a Graduate School requirement and can be scheduled once you successfully completes all graded courses for your degree. This exam can be taken as early as the fourth (4th) semester you're enrolled, but **MUST** be completed by the end of your second-to-last semester you are enrolled.

This examination has two parts; a written examination and an oral examination.

- i. Written Prelim – The written prelim exam must be completed and submitted to the MAE Graduate Office before a request for the oral prelim exam can be submitted. 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 | • Proposed Work |
| • Methodology | • Timeline |
| • Research Objectives | • References |

For sample dissertation proposals, visit the [MAE Graduate FAQ Page](#) (*Thesis/Dissertation Examinations* section)

- ii. Oral Prelim – Upon successful completion of the written prelim you can submit the request to schedule your oral prelim. The oral preliminary exam generally includes a presentation by the candidate, questioning of the candidate, and a period of deliberation and discussion.

Scheduling the Preliminary Exam

Step 1) Verify your PhD Plan of Work is approved before attempting to schedule your Preliminary Exam.

- Instructions on creating your PoW start on pg. 5 of this guide

Step 2) Complete written Preliminary Examination (Dissertation Proposal)

- Submit your proposal to your Committee members (everyone except the GSR).
- Your Faculty Advisor (Chair) notifies the MAE Graduate Office that you have passed the written exam.

Step 3) Request to schedule your oral Preliminary Exam after you successfully complete your written exam.

- Print and complete an Oral Prelim Exam form located on the Graduate School's [Forms](#) website.
- Reserve a conference room with the MAE Front Office and include it on the form
- Submit the exam request to the MAE Graduate Office (3113 EB3) for departmental approval.
 - The MAE Graduate Office will have the Director of Graduate Programs sign the request form before forwarding it to the Graduate School for final approval. The Graduate School must receive your exam at least 10 business days prior to your proposed exam date.

NOTE: It can be very difficult to coordinate an exam time that works for all committee members. Planning your exam day and time in advance can help ensure all committee members are present and prevent any delays in your exam completion timeline.

PhD Final Examination (Final Defense)

The PhD Final Oral Exam (Dissertation) is a Graduate School requirement, and must be completed at least one semester (4 months) after the preliminary exam. 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.

Important: Your entire Advisory Committee attends your Prelim Exam (oral) and your Final Exam. The Advisory Committee is explained in more detail later in this guide.

Scheduling the Final Exam (Final Defense)

Step 1) Request to schedule your Final Exam/Dissertation – Exam must be performed before the ETD Review Deadline. The final exam must be taken at least one semester (4 months) after the preliminary exam and before the ETD Review Deadline you chose.

- Print and complete a PhD Final Exam form located on the Graduate School's [Forms](#) website.
- Reserve a conference room with the MAE Front Office and include it on the form
- Submit the exam request to the MAE Graduate Office (3113 EB3) for departmental approval.
 - The MAE Graduate Office will have the Director of Graduate Programs sign the request form before forwarding it to the Graduate School for final approval. The Graduate School must receive your exam at least 10 business days prior to your proposed exam date.

Step 2) Apply to Graduate for your PhD by the ETD Apply to Graduate Deadline if you have not done so yet

- Additional information regarding ETD guidelines is included on pg. 9 of this handout.

Step 3) Upon Receiving an “Unconditional Pass” on the Final Exam/Dissertation

- Your dissertation draft must be submitted to the Electronic Thesis Dissertation (ETD) Editor within 5 days after the exam (but absolutely before ETD deadline). Additional information regarding ETD guidelines is included on pg. 9 of this handout.
- The ETD 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.

Step 4) Keep an eye on your email for important information from the Graduate School, the MAE Graduate Office, or your advisor.

- You may still have important deadlines to meet with regards to graduation and officially finishing your degree. Important deadlines and information will be emailed to you by the Graduate Office, but the Graduate School and/or your advisor may have more information as well.

Applying to Graduate (MyPack Portal)

All students must Apply to Graduate during their final semester. You must Apply to Graduate to participate in commencement, have the degree posted on the transcript, and receive a diploma.

- Apply to Graduate in MyPack Portal: **Student Homepage > Planning & Enrollment tile > Apply for Graduation.** Detailed instructions are available [here](#).
- We advise students to apply to graduate at the same time they schedule their exams (Prelim and Final)

After Applying to Graduate your application will be reviewed/approved by MAE and the Dean's Office. MAE graduate students that applied to graduate by the deadline will receive a Graduation Survey from the MAE Graduate Office. This survey must be completed in order to be invited to participate in the departmental graduation ceremony.

Electronic Theses and Dissertations (ETD) Information

The Graduate School requires all PhD students to use the ETD, and requires you to follow the ETD deadlines. These deadlines are very strict– the Graduate School does not make exceptions if these deadlines are missed. It is your responsibility to be aware of (and meet) [ETD deadlines](#). **Every PhD student completing a dissertation has 3 ETD deadlines to meet in sequential order:**

- 1) ETD Review Deadline** – all students must unconditionally pass the final exam and submit for the ETD Review by this deadline. Students who meet this deadline will not be allowed to register in the same academic program for any subsequent semester. The final ETD file is to be submitted before the Final ETD Approval Deadline and committee approval must be completed by the Final ETD Committee Approval Deadline. You may choose between:
 - a. No Registration Required Deadline** – meet this date in order to avoid registering for the semester in which you are graduating
 - b. Registration Required Deadline** – meet this date if you are/will be registered for the semester in which you are graduating
- 2) Final Error-Free ETD Deadline** – applies to both “No Registration Required” and “Registration Required” students. Date by which a thesis or dissertation student who met that semester’s review deadline (either the No Registration or Registration Required), must submit the final error-free ETD to the ETD Reviewer in order to graduate at the end of the semester. Graduation will still be contingent upon approval of the final ETD by the student’s advisory committee before the expiration of the Final ETD Committee Approval Deadline.
- 3) Final Committee Approval Deadline** - applies to both “No Registration Required” and “Registration Required” students. Date by which a thesis or dissertation student must submit and have the final ETD approved by all members of their advisory committee in order to graduate at the end of the semester.

IMPORTANT: In addition to the ETD deadlines, all PhD students must complete the [Doctoral Required Forms](#). Additional information can be found on the Graduate School’s [Electronic Thesis and Dissertations](#) website.

Semester-by-Semester Program Checklist

PhD Students

First Semester

- Create your plan of work and begin to consider who will be your faculty advisor.

Second Semester

- Identify your faculty advisor and review your PoW with them.
- Consult with your faculty advisor to identify remaining members of your Advisory Committee.
- Submit POW for approval in MyPack Portal by the end of the 2nd semester.

Third and Fourth Semester

- Review your PoW with your faculty advisor at least once.
- With Advisory Committee in place, PhD students can take their preliminary exam as early as their fourth semester (once all lecture courses are completed).

Fifth Semester (or second to last semester)

- Review ETD Deadlines for the term you intend to graduate.
- Complete written prelim examination then schedule the oral prelim exam.
- Complete the oral prelim exam before the end of 5th semester.
 - After receiving a Unconditional Pass, PhD students must wait 4 months to schedule their final exam.

Sixth Semester (or final semester)

- Apply to graduate in MyPack Portal.
- Schedule and perform the final exam– adhering to all applicable ETD deadlines.