

MAE Direct-to-PhD Program (d-PhD) Student Guide

Hello MAE Direct-to-PhD Students,

Included in this guide is important information to help ensure you are meeting all of the requirements for the Mechanical and Aerospace Engineering d-PhD program. Please review this information and contact the MAE Graduate Office (mae_gradoffice@ncsu.edu) if you have additional questions.

Quick Guide to Resource Links Provided in this Guide

Below is a list of websites referenced throughout this student guide.

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

NCSU Graduate Handbook - <http://catalog.ncsu.edu/graduate/graduate-handbook/>

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)

Electronic Theses and Dissertations (ETD) Deadlines & Information - <https://grad.ncsu.edu/students/etd/>

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

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

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Direct-to-PhD Doctoral Degree Requirements

The MAE d-PhD program is unique to our standard PhD program in that students received a non-thesis Master's degree en-route to completing the PhD degree program. As such, **all d-PhD students complete a MS Graduate Plan of Work (GPoW) and a PhD GPoW during their academic program.**

Students must first unconditionally pass both the Qualifying Exam and PhD Preliminary Examination before requesting to receive the master's degree. Degree requirements for both portions of the academic program are explained below.

Direct-to-PhD degree requirements:

- Minimum GPA: 3.0
- Graded Courses: You must have a minimum of 39 credits from graded courses
 - o Up to 5 courses (15 credits) can be from non-MAE courses approved by your advisor
 - o For an optional minor – 3 courses must be in the same program
- 700-level courses: All PhD students 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

En-route Master's (non-thesis) degree:

- Graded Courses: 10 of the graded courses from your PhD degree also fulfill the degree requirements to receive a MS (non-thesis) degree.

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 students take no more than 9 credit hours per semester.
- Students that are not registered full-time 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. Read more in the Graduate Handbook: [section 3.14a Requirements of Continuous Enrollment](#).
- It is possible to file a Leave of Absence for up to two (2) semesters during your academic career at NCSU.
- Failure to maintain continuous enrollment or request a leave of absence will result the termination of your graduate student status.

Generally, students are not expected to register for summer courses UNLESS they are scheduling their Final Exam (final defense)

- Students scheduling the PhD Final Exam over the summer, including the summer-fall intersession, are required to register for at least one credit in the summer term in which you defend. Typically, defending graduate students will register for 1 credit of MAE 896 (Summer Dissertation Research) which is a 10-week summer session at a discounted price.
- Students completing the PhD Preliminary exam during the summer term are not required to register.

Enrollment guidelines for the final semester

- If you have completed all credit hour requirements for the PhD degree, 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 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.

Full-time Academic Load Waiver

Upon successful completion of 69 credit hours toward the degree, all PhD students will automatically receive a 3-credit hour full-time academic load waiver. This means, the student will automatically 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 PhD program.

Graduate Plan of Work & Advisory Committee

Direct-to-PhD students complete two Graduate Plans of Work (GPoW). One for the MS (non-thesis) degree plan and one for the PhD degree plan. The MS (non-thesis) diploma is issued en-route to completing the PhD degree plan. All MAE graduate students must submit their Graduate Plans of Work by the end of the second semester they are enrolled. This should also occur before completing the Qualifying Exam.

Graduate Plan of Work

The Graduate Plan of Work is a document that serves as a guide to successful degree completion. The GPoW should only 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 during their academic career. Consider the GPoW as a “living document” that can be reset and updated as students continue to develop and refine their academic program.

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

Advisory Committee

The primary function of the committee is to advise a student in all aspects of the educational program, in addition to monitor and evaluate progress toward the completion of the degree. Thus, the committee must be active throughout a student’s graduate program, beginning with helping students prepare the Graduate Plan of Work. The committee should provide an intellectually stimulating foundation for the student’s professional and scholarly development, and should be sensitive to any difficulties in the student’s progress. The committee also 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 GPoW in MyPack Portal by navigating to Student Homepage > Planning and Enrollment tile > Graduate Plan of Work > *Committee* tab.

Building Your Committee

The MS (non-thesis) Advisory Committee is comprised of one person, the Chair. The Chair of your committee is your faculty advisor.

The PhD Advisory Committee is comprised of at least 4 people (at least three of them must be from the MAE department):

- i. The Chair
- ii. Three (3) Members
 - a. One Member must be designated as an ‘Outside Rep’. This member must be a non-MAE graduate faculty member at NC State University.
 - b. If you have two Co-chairs on your committee, only two additional Members are required.

Have a minor? If you have a minor, then a minor representative must also be included on the advisory committee.

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

The Graduate Plan of Work Approval Process:

- 1) Submit each GPoW for approval in MyPack Portal.
 - Advisory committee roles must be assigned before completing this step
- 2) Committee approval: each committee member is required to review and approve your GPoW.
 - Each member accepts their role on your committee when completing this step also.
- 3) Departmental approval: the director of graduate programs (DGP) reviews the GPoW for approval.
- 4) Graduate School approval

Note: If at any time in the process your GPoW is denied, a comment will be made and your GPoW will be reset. Click the *Comments* tab of your GPoW to read comments regarding the required changes that should be made. Once the necessary changes have been made, you can resubmit your GPoW for approval again, and the approval process will start over (Committee approval, DGP approval, then Graduate School approval).

Timeline for Creating Your Plan of Work

Semester 1 and 2: Create Each Graduate Plan of Work and Advisory Committee

Submit both Graduate Plans of Work for approval at the same time. The GPoWs must be approved before completing the Qualifying Exam.

- MS (non-thesis) GPoW should only include 10 graded courses (30 credit hours). You will also include these courses on your PhD GPoW.
- PhD GPoW should include a minimum of 13 graded courses, and minimum of 24 credit hours of research (MAE 895).

Continuously: review and edit your PhD Plan of Work as needed

- The GPoW review and modification process can be done continuously, especially if the classes you take do not match your original course plans.
- We recommend reviewing your Graduate Plans of Work with your advisor at least once a year.

Second-to-Last Semester: your PhD Graduate Plan of Work MUST be approved (no edits should be made to your GPoW at this point)

- This must be done prior to scheduling the Final Exam.

How/Why to Request to Reset Your Graduate Plan of Work

Since a student's course plan can change throughout their graduate program, the GPoW can be reset throughout your program. Simply email mae_gradoffice@ncsu.edu to make your request and the MAE Graduate Office can assist you. Once reset, you will have to opportunity to edit your course list on your GPoW– resubmitting it for approval once all the necessary changes have made.

Example of the Graduate Plans of Work for d-PhD Students

Direct-to-PhD (d-PhD) students are required to create two Graduate Plans of Work. One for the MS (non-thesis) degree, and another for the PhD degree.

The MS Advisory Committee only requires one member, the chair. This is also your faculty advisor.

The PhD Advisory Committee requires at least four (4) committee members; a chair, and three (3) members. These requirements are outlined in the NCSU Graduate Handbook ([section 3.2 Advisory Committees](#)).

PhD Plan of Work		MS Plan of Work	
Example		Example	
Course Type	Credits	Course Type	Credits
Graded Course ★	3	Graded Course ★	3
Graded Course ★	3	Graded Course ★	3
Graded Course ★	3	Graded Course ★	3
Graded Course ★	3	Graded Course ★	3
Graded Course ★	3	Graded Course ★	3
Graded Course ★	3	Graded Course ★	3
Graded Course ★	3	Graded Course ★	3
Graded Course ★	3	Graded Course ★	3
Graded Course ★	3	Graded Course (or non-MAE) ★	3
Graded Course ★	3	Graded Course (or non-MAE) ★	3
Graded Course ★	3	Graded Course (or non-MAE) ★	3
Graded Course	3	Total	30
Graded Course	3		
Graded Course	3		
Graded Course or MAE 895	3		
Graded Course or MAE 895	3		
Graded Course or MAE 895	3		
MAE 895 (Dissertation Research)	24		
Total Credits	72		

★ indicates the course is included on another Plan of Work. This is typical for d-PhD students.

Special Notes:

- Each plan of work should only include the minimum credit hour required for the respective degree.
- A 400-level course can only be included on the MS Plan of Work (per Graduate School policy)
- The only 800-level course(s) that should appear on a Plan of Work is MAE 893, MAE 895, and/or MAE 896.

d-PhD Qualifying Exam

All Direct-to-PhD students are required to complete a Qualifying Exam before the end of the third semester of the program. A student's faculty advisor administers the exam, and a minimum of three advisory committee members must participate in the examination.

The below guidelines must be followed when completing the QE:

- Complete a written assignment designed by an advisory committee member. Assignment guidelines are developed at the discretion of each committee member.
- Each committee member should report the successful completion of the assignment to the student's faculty advisor.
- The student's faculty advisor reports the successful completion of the QE, and copies of the completed assignments, to the MAE Graduate Office.

PhD Preliminary Examination

The Preliminary Exam can be scheduled once a student successfully completes all the *graded coursework* that is to be applied toward the PhD degree (per [Graduate School policy](#)). Additional information regarding the prelim exam is available [here](#). The exam is comprised of two parts: a written examination and an oral examination.

- i. Written Prelim: Students develop a Dissertation Proposal 5-6 pages in length. The proposal must include the following sections:
 - Motivation
 - Methodology
 - Research Objectives
 - Proposed Work
 - Timeline
 - References

Sample proposals are available at [MAE Graduate FAQ](#) (*Thesis/Dissertation Examinations* section)

- ii. Oral Prelim: Student present the dissertation proposal to the advisory committee. The advisory committee will question, deliberate, and discuss the student's presentation before announcing their judgement.

Scheduling the Oral Preliminary Exam

Step 1) Consult with your advisory committee to identify a date and time to conduct the exam.

Step 2) Email the completed dissertation proposal and Graduate School [PhD Exam Request Form](#) to the MAE Graduate Office.

- The Graduate School must be informed if a committee member will be attending the oral examination remotely.
- Contact the receptionist in the MAE Main Office to reserve a room for the oral exam if one is needed.

Note: The Graduate School will not accept committee modification requests once the oral prelim exam has been scheduled.

**** Apply to Graduate for the master's degree in MyPack Portal upon unconditionally passing the Prelim Exam.****

PhD Final Oral Examination (Final Defense)

The PhD Final Oral Exam 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 the Prelim Exam and the Final Exam. The advisory committee cannot be modified once the Prelim Exam has been completed.

Scheduling the Final Exam

Step 1) Request to schedule your Final Exam – this exam must be taken at least one semester (4 months) after the preliminary exam and before the ETD Review Deadline you have chosen.

- Complete the Graduate School's [Schedule Oral Prelim/Final](#) exam request form and email it to the MAE Graduate Office at least 10 business days prior to the proposed exam date.
- Contact the receptionist in the MAE Main Office to reserve a conference room for your exam, if one is needed.
- Email the exam request form to the MAE Graduate Office 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 the PhD degree in MyPack Portal before the term's given deadline.

- This deadline is available on the [Electronic Thesis Dissertation \(ETD\) Deadlines](#) website.

Step 3) Upon Receiving an "Unconditional Pass" on the Final Exam...

- Submit your first draft to the [Electronic Thesis Dissertation \(ETD\)](#) website immediately following the exam.
- The ETD will review your dissertation and inform you of any formatting corrections that should be made.
- Upon completing the recommended 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.

Electronic Theses and Dissertations (ETD) Information

The Graduate School requires all PhD students to use the ETD, and requires you to follow all ETD deadlines. These deadlines are very strict– the Graduate School does not make exceptions if these deadlines are missed. It is the student’s 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.

Applying to Graduate (MyPack Portal)

All d-PhD students Apply to Graduate for the MS en-route and the PhD. You must Apply to Graduate to participate in commencement, have your degree conferred on your transcript, and receive your diploma.

Apply to Graduate in MyPack Portal: **Student Homepage > Planning & Enrollment tile > Apply for Graduation**. Detailed instructions are available [here](#).

- Apply to graduate for the MS (non-thesis) degree upon successful completion of the oral preliminary exam
- Apply to graduate for the PhD program at the same time they schedule their Final Exam

After Applying to Graduate your application will be reviewed/approved by MAE and the Dean’s Office. MAE graduate students that Apply to Graduate will be included on future correspondences regarding the MAE graduation ceremony.

D-PhD Semester-by-Semester Program Checklist

First Semester

- Identify your Faculty Advisor.
- Consult with faculty advisor to identify remaining members of your Advisory Committee.
- Create each Graduate Plan of Work (non-thesis MS and PhD).
- Discuss the courses you intend to take during your academic career (Graduate Plan of Work) with your advisor.

Second Semester

- Consult with faculty advisor to identify remaining members of your Advisory Committee.
- Submit each GPoW for approval.
- Take Qualifying Exam as early as 2nd semester.

Third Semester

- MUST complete Qualifying Exam by the end of the 3rd semester.

Fourth Semester

- Review and update Graduate Plans of Work as necessary.

Fifth and Sixth Semester

- Review and update your Graduate Plans of Work as necessary.
- PhD students can take Preliminary Exam as early as their fifth semester (once all lecture courses are completed).
 - Reminder: students can Apply to Graduate in MyPack Portal for the MS (non-thesis) degree ONLY AFTER unconditionally passing Oral Prelim Exam.

Seventh Semester (or second-to-last semester)

- Review ETD Deadlines for the term you intend to graduate (in preparation for your Final Exam).
- Complete Written Prelim Exam then schedule the oral prelim exam.
- Complete the oral prelim exam before the end of this semester.
- Apply to Graduate for MS degree ONLY AFTER unconditionally passing Oral Prelim Exam.

Eighth Semester (or final semester)

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