



NAVAL  
POSTGRADUATE  
SCHOOL

# DOCTORAL STUDENT POLICY

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Department of Mechanical & Aerospace  
Engineering

[www.nps.edu/mae](http://www.nps.edu/mae)

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## 1. Introduction

This document provides a guide to the Department Doctoral Program. Each PhD student will have a unique program depending on their background, interests and proposed area of research. The MAE Department faculty and staff are here to help you succeed.

For questions please see the following people:

CDR Joseph Keller	Program Officer (x-2033) Curriculum 570
LCDR Hank Travis	Space Systems Program Officer (x-7517) Curriculum 591
Prof Knox T Millsaps	Department, Chairman (x-3382)
Prof Garth V Hobson	Associate Chair & Chair of the Dept PhD Committee (x-2888)

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## 2. Welcome Aboard

### 2.1. *Message from the Chairman*

Welcome to the Department of Mechanical and Aerospace Engineering. This guide will help you with planning your doctoral studies in the MAE Department at NPS. The PhD degree is the terminal degree in the American University System, and has special meaning for those in the field. It generally indicates that a person who holds this degree is a true expert and scholar in the field and has a great understanding in the literature and practice of their discipline.

While there are course work requirements in both your major and minor field, the doctoral degree is really focused on original research. You should during your studies obtain a complete understanding of the narrow area that is the focus of your studies, and create some new and original contribution to the field that can be included in the archive literature as a journal publication.

I recommend that you read this document in its entirety so you better understand the complete program, including the requirements and necessary paperwork. This will provide you the opportunity to start exploring your options early

**Knox T Millsaps, PhD**  
**Chairman, Dept of Mechanical & Aerospace Engineering**

## **2.2. Message from the Chair of the Dept. PhD Committee**

Congratulations on being accepted into this prestigious program, I will be your advisor until you have decided on your area of study and have selected a faculty member to serve as your dissertation supervisor. I will arrange for an office space for you and initially will council you to meet as many faculty members in your area of interest to determine whom your supervisor will be. Once your supervisor has been chosen and your committee established, you will be under their responsibility, with final oversight from the Dept PhD Committee.

**Garth V Hobson, PhD**  
**Chairman, Dept PhD Committee**

## **3. Degree Requirements**

### *Sequence of Events Leading to a PhD*

The following is a general outline of a student's progress through the program, with amplification in subsequent paragraphs:

1. The student applies for admission to the program and is accepted.
2. The departmental PhD committee nominates, for approval by the Academic Council, a dissertation committee, which henceforth bears the responsibility for the study program, and for general guidance in research program. Until the dissertation committee is named, the departmental PhD committee has the responsibility to oversee the student's study program.
3. The study program will include one minor, a foreign language requirement or a computing requirement.
4. When the student's major and minor program is complete, the dissertation committee administers a written and oral qualifying examination. Minimum Major course work requirement will be four graduate level (one 3000 and three 4000) courses, beyond the Masters or equivalent level. Exceptions may be granted by the Doctoral Committee, upon request by the candidate.
5. The departmental PhD committee names a member of the dissertation committee to be dissertation supervisor, and certifies to the Academic Council that the individual so named is qualified under the guidelines of this Policy Manual.
6. Upon successful completion of the study program, any minor, language, or computing requirements, passage of the written and oral qualifying examinations and approval of a dissertation topic, the student becomes eligible for advancement to candidacy. The departmental PhD committee then recommends that the Academic Council advance the student to candidacy for the doctorate.

7. When the candidate's investigations are complete and the dissertation has been submitted, the dissertation committee administers a final oral dissertation defense.

After the unanimous recommendation of the dissertation committee, the Academic Council makes the final decision to recommend a candidate for the award of the PhD degree.

## **4. Selection of Dissertation Supervisor, Dissertation Committee, and Dissertation Topic**

### ***4.1. Dissertation Supervisor***

The departmental PhD committee nominates a dissertation committee, to be approved by the Academic Council. One member of this committee is identified as the dissertation supervisor, and the departmental PhD committee must certify to the Academic Council that the individual so named is qualified under the requirements of this Policy Manual. The student, in conjunction with the dissertation supervisor, identifies a dissertation topic, which must be approved by the dissertation committee. The departmental PhD committee also designates the member of the dissertation committee who shall serve as dissertation committee chair, if that person is to be different from the dissertation supervisor.

### ***4.2. Dissertation Committee***

The candidate's dissertation committee, once established, is responsible for supervising the candidate's completion of his/her degree, including completion of course of study, dissertation research, and production of the dissertation document. The dissertation committee is nominated by the departmental PhD committee, and will consist of five or more members. Four of the committee members must be full-time NPS faculty. At least one of the NPS faculty members shall be from outside the department or interdisciplinary academic group that is granting the degree. One or more members of this committee may be from another university or appropriate institution. At least three members must be from within the MAE Department. At least four members must have earned the doctorate and the committee may contain no more than two members who have not earned the doctorate. The departmental PhD committee shall designate one or more members of the dissertation committee to be the dissertation supervisor.

The chair of the Dissertation Committee shall be a MAE Tenure Track faculty member who has supervised and graduated at least one PhD student.

### ***4.3. Qualifications and Responsibilities of the Dissertation Supervisor***

The dissertation supervisor has the responsibility to supervise the student's program of study in accordance with the requirements of the major Department and Academic Council.

The dissertation supervisor should have the following qualifications:

1. a doctorate in the his/her field of specialty;
2. experience in thesis advising;
3. activity and productivity in research, as evidenced by recent publications of his or her research in recognized journals, or a broad reputation as a productive researcher in his or her field of specialty. Other evidence may be considered which is pertinent to demonstrating research activity or productivity.

#### **4.4. *The Dissertation Topic***

The distinct requirement of the doctorate is the successful completion of a scholarly investigation leading to the original and significant contribution to knowledge in the candidate's major area of study. The subject of the investigation must be approved by the dissertation committee, and must be submitted to the Council no later than the time of the request for advancement to candidacy.

A minimum of six months must elapse between successful completion of the oral qualifying examination and the defense of the dissertation.

#### **4.5. *Minor Field of Study***

The program of study will include one minor field suitable to the needs of the student and to the research to be undertaken. Such requirements may be satisfied within the Department or preferably through another Department. Any minor requirement will be satisfied by procedures specified by the Department of the minor; these may include written or oral examinations, completion of a sequence of courses, etc.

Typically most MAE students do their minor within the Department of Applied Mathematics; whose minor requirements are;

"A PhD student from another department can qualify for a minor in mathematics by taking at least four mathematics courses at the 3000 or 4000 level; at least three of these must be at the 4000 level. The QPR for the courses taken toward the minor requirement must be at least 3.5. The courses taken should constitute a coherent minor program, and must be approved by the Academic Associate for the Department of Mathematics. The use of reading courses to satisfy the requirement is strongly discouraged."

The minimum Minor requirement within MAE is four graduate level (one 3000 and three 4000) courses with a grade of B or higher in one distinct track that does not overlap with the major area. Fulfillment of this requirement also requires a signed letter from the Departmental PhD Committee member representing the Minor Track to the Doctoral Committee.

#### **4.6. *Written Qualifying Examination***

The written qualifying examination is a comprehensive test of the student's basic knowledge of and skills in the major area. The exam is the responsibility of the dissertation committee, and is administered by faculty members within the department.

The written exam is administered, by a minimum of three MAE faculty, after the student's program of study is essentially completed.

The student must pass all written qualifying examinations.

If the student fails the first written qualifying examination, the dissertation committee may grant a second examination opportunity to the student. If the privilege of re-examination is granted, the time period within which it must be accomplished will be specified by the dissertation committee, but it shall not exceed 12 months. Only two opportunities for passage are allowed.

#### **4.7. *Oral Qualifying Examination***

The oral qualifying examination may be scheduled only after successful passage of the written qualifying examination and fulfillment of the minor field requirement.

The oral qualifying examination is the culmination of the course of study. The purpose of the oral qualifying examination is to test basic knowledge and creative ability and to demonstrate the student's capacity to use material from the course of study. The oral qualifying examination shall contain no prepared presentation; its format shall be exclusively question-and-answer.

Passage of the oral qualifying examination requires a unanimous vote of the examiners. All dissertation committee members must be physically present during all phases of the oral exam.

The Academic Council representative must attend all phases of the oral examination, and shall report to the Academic Council that the examination was conducted in accordance with the rules of this Policy Manual.

If the student fails the first oral qualifying examination, the dissertation committee may grant a second examination opportunity to the student. If the privilege of re-examination is granted, the time period within which it must be accomplished will be specified by the dissertation committee, but it shall not exceed 12 months. Only two opportunities for passage is allowed.

Upon successful completion of the Oral Qualifying Examination the candidates coursework requirement ceases.

#### **4.8. Reporting of Examination**

The result of the qualifying examinations must be reported to the cognizant Program Officer, the Associate Provost for Academic Affairs, and to the Academic Council, not later than two weeks after the scheduled date of the oral qualifying examination. Each member of the dissertation committee shall sign the report.

The Academic Council representative must submit a written report on the oral qualifying examination. The report is sent to the Academic Council to verify that the oral examination was conducted in accordance with the rules of the Academic Council.

#### **4.9. Time Limits for Retaking the Qualifying Examination**

If a student, on first attempt, fails the qualifying examination, he or she may be re-examined only once and only if the dissertation committee so recommends. No student may take the oral qualifying examination more than twice. The dissertation committee may recommend that only prescribed parts of the examination be repeated. If the privilege of re-examination is granted, the time period within which it must be accomplished will be specified by the dissertation committee, but it shall not exceed 12 months.

#### **4.10. Dissertation Defense**

When the dissertation research has been completed, the PhD candidate prepares a draft of the dissertation and provides a copy to each member of the dissertation committee for approval. Upon the dissertation committee's unanimous acceptance of the draft as the basis for a dissertation defense, the dissertation committee chair notifies the departmental PhD committee and provides it with a draft of the dissertation. The dissertation committee chair schedules the final dissertation defense. This examination must be scheduled later than one week after the submission of the draft of the dissertation to the departmental PhD committee.

All members of the dissertation committee are required to be physically present during the final defense and the entire Academic Council is invited to attend. The Academic Council shall designate a representative, who must attend the dissertation defense.

In the final dissertation defense, the candidate presents the dissertation and is subject to such questions as the entire dissertation committee deem appropriate. The extent of participation of all parties is determined by the dissertation committee chair.

#### ***4.11. Report of Completion of Dissertation and Successful Defense***

The results of the final dissertation defense and completion of the dissertation document are reported to the Academic Council, the report bearing the signatures of all the members of the dissertation committee.

If the candidate is passed, the report shall also include: nomination of the successful candidate for the award of the degree, Doctor of Philosophy.

#### ***4.12. Time Limits for Retaking the Dissertation Defense***

If a candidate, on first attempt, fails the final dissertation defense, then he/she may be re-examined only once, and then only if the dissertation committee so recommends. If the privilege of re-examination is granted, the time period within which it must be accomplished shall be specified by the dissertation committee, but it shall not exceed 12 months.

#### ***4.13. Time Limit for Completing the PhD***

All requirements for completing the PhD degree must be completed within a period of five years after advancement to candidacy.

***Any deviation from this Policy will have to be approved by the Departmental PhD Committee***