

THE GEORGE WASHINGTON UNIVERSITY  
SCHOOL OF ENGINEERING AND APPLIED SCIENCE  
ONLINE PROGRAMS OFFICE

# **DOCTOR OF PHILOSOPHY (PH.D.) STUDENT GUIDELINES**

# SEAS ONLINE PH.D. STUDENT GUIDELINES

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## **Doctor of Philosophy Program Overview**

The SEAS Online Doctor of Philosophy (Ph.D.) programs consist of a minimum of 54 credit hours divided into 2 stages. The first stage comprises a classroom experience of 8 graduate-level, 3-credit-hour courses. The second stage comprises a qualifying exam and an independent research effort of at least 30 credit hours of dissertation research culminating in the dissertation defense. The original dissertation is written in the field of systems engineering, which focuses on innovation in the theories that govern the structure, operation, and management of technical and scientific organizations.

The program's **4 milestone** accomplishments must be completed by specific deadlines in keeping with the accelerated nature of the program. After completing the coursework with a minimum Grade-Point Average (GPA) of 3.4 (**Milestone 1**), and passing a qualifying oral examination (**Milestone 2**), the student writes a journal article that must be accepted for publication in an approved journal (**Milestone 3**), after which the dissertation may be defended (**Milestone 4**).

The objectives of the Ph.D. program in systems engineering are to ensure that graduates:

- Demonstrate, orally and in writing, mastery of broad-based knowledge in systems engineering, and of a specific area of knowledge relevant to their own research interests, including theories and methodologies, along with mastery of a research methodology.
- Demonstrate mastery of the methods, tools, and ethics of conducting primary research, and mastery of discovering and effectively evaluating appropriate secondary research sources, to support an original idea of their own.
- Develop and present an original study to the scholarly community that is based on research in primary sources and makes a significant contribution to the field, and that demonstrates the ability to engage in a productive research career.

### **1. Registration**

The student must maintain continuous enrollment throughout the SEAS Online doctoral program. Semester enrollment information is distributed by the SEAS Online Office by email before the start of each semester, and registration is processed directly by the office on the date listed in that email, assuming that the students have honored their academic and financial obligations to the university.

Registration holds are placed on student accounts with outstanding balances. Our office cannot process registration when there is a registration hold on the account. For this reason, students must make payment on time each semester. Late payment of tuition is

possible grounds for removal from the doctoral cohort. Additional details and policies can be found at <https://seasonline.gwu.edu/about-us/policies-procedures-doctoral/>.

*Leaves of absence (LOA):* Doctoral curricula are determined by the faculty, and course information is provided to students by email from the SEAS Online office before the start of each semester. Students are registered as members of a cohort. This means that all courses are taken in lock-step throughout the program. Leaves of absence are generally not permitted. A Ph.D. student who finds it necessary to interrupt active pursuit of the degree may petition the SEAS Online office for a leave of absence by emailing a full explanation and attaching a completed LOA form and any supporting documentation to [seasdoc@gwu.edu](mailto:seasdoc@gwu.edu). Petitions are usually answered within two work weeks. LOAs may be granted for family emergency (up to 6 months), physical or mental health treatment (up to 6 months), or deployment to active military duty (up to one year).

*Transfer credit:* Transfer of credit is not permitted in doctoral programs.

## **2. The Classroom Stage**

To complete the classroom stage Ph.D. students must satisfactorily complete the required curriculum of 24 credit hours, complete each course with a grade of **B-** or better, and achieve a minimum GPA of 3.4 (**Milestone 1**).

*Grading and Scholarship:* GW uses the following grading system for graduate students: **A, B, C, F**; other grades that may be assigned are **A-, B+, B-, C+, C-**. Individual course grades are based on a standard curve relative to the class average.

Students who receive **I** grade below **B-** are barred from further enrollment in graduate courses and will not be readmitted as a degree candidate.

## **3. The Research Stage**

Following successful completion of the classroom stage (**Milestone 1**), the student is admitted to candidacy for the Ph.D. and is enrolled in EMSE 8999 Dissertation Research to conduct the research to be developed into the program milestone accomplishments.

*Research stage requirements:*

- A. enroll in a minimum 30 credit hours of EMSE 8999
- B. pass a qualifying oral examination before a faculty panel
- C. write an original research article and have it accepted for publication by an approved academic journal
- D. write and defend a dissertation.

No fewer than 30 credit hours of EMSE 8999 will satisfy the requirements for the Ph.D. Students are registered for a minimum of 6 credit hours in each Fall and Spring semester and 3 credit hours in Summer. Extensions may be granted on a case by case basis depending on the candidate's satisfactory progress toward the program milestones. During approved extension semesters, students are registered for 3 credit hours each summer and 6 credit hours each fall and spring semester at the tuition rate in effect at that time.

The average minimum amount of out-of-class or independent learning you should expect to perform each semester in the research course is approximately 20 hours per week.

### 3.1 Doctoral Research Advisors

The program faculty assign doctoral research advisors to the Ph.D. candidates as they enter the research phase. Candidates work with their assigned advisor team for the remainder of the program.

### 3.2 Research Meetings and Feedback

The advisors schedule monthly research meetings with the advisees, who are required to attend. Meetings are announced by email in advance. Candidates are responsible for submitting slides covering research progress to the advisors by the deadline provided in the meeting announcement. Slides must be submitted for all meetings, even if the student will be absent.

Advisor teams directly manage the research course EMSE 8999. Slide submission deadlines are set by the advisor team and communicated to the students by email.

Students receive written feedback from the advisors after each advising meeting, and a Semester Summary Report at the end of each semester. Progress is noted as:

- **Green** – Student is making sufficient progress toward milestone completion
- **Yellow** – Student is making some progress but is in danger of not meeting milestone timelines
- **Red** – Student is making insufficient progress

If the advisors determine that the student makes insufficient progress (**Red**) in a semester, a NC (No Credit) grade is assigned for the course on the transcript and the candidate's program and research toward the Ph.D. is terminated. A one-time courtesy option to convert in the current semester to a post-master's professional degree (Engineer or Applied Scientist) is offered.

### 3.3 Research Submissions

All abstracts, and journal articles must be forwarded to the research advisors for review and approval before they are submitted to an approved journal. The SEAS Online office must be copied (at [seasdoc@email.gwu.edu](mailto:seasdoc@email.gwu.edu)) on all submissions and on all other correspondence with journal publications, or related entities. All final advisor-approved papers must be sent to [seasdoc@gwu.edu](mailto:seasdoc@gwu.edu) for academic integrity review prior to submission. See “4.6 A Note on Academic Integrity” below.

#### **4. The Program Milestones**

Ph.D. candidates (students in the research stage) who are registered for EMSE 8999 complete **Milestones 2, 3, and 4**, described below.

##### **4.1 Milestone 1—Grade-Point Average**

Students must complete the required Ph.D. classroom courses with a final GPA of 3.4/4.0 or better. They can have no grades below B-.

##### **4.2 Milestone 2— Qualifying Oral Examination/Conference Presentation**

At the end of the first semester of research, the candidate must attempt and pass the qualifying oral examination before a faculty panel. The examination will focus on background knowledge, literature search information, and as well as try to determine if the projected research will be sufficient, will produce work that will make a significant contribution to the field, and will be able to be completed in the allotted time frame. In support of the qualifying exam, the candidates are expected to submit and be approved for a presentation in a scholarly Systems Engineering conference.

Candidates who fail to pass may attempt the exam again the following semester. If a candidate does not pass the qualifying exam after the second attempt, their studies will be terminated and they will have the option to have their work transferred to a professional degree program.

##### **4.3 Milestone 3—Journal Article**

The candidate must submit an approved research article embodying the results of an extended original study to an SEAS Online-approved, refereed scholarly journal (list at *Appendix*) no later than 30 months after the start of the Ph.D. program. Credit must be given in the publication to the fact that the material is abstracted, summarized, or developed from a dissertation submitted to the George Washington University in partial fulfillment of the requirements for the Ph.D., and the dissertation advisors must be listed as co-authors. Students who have not submitted a journal article within 30 months of the start of the program, or whose article is not accepted for publication by the five-year time limit are subject to removal from the program.

If revisions are requested from the publication, candidates must send back the revised article, approved by the advisors, within 30 days. Failure to do so results in an automatic red for the semester. Reviewer comments should be forwarded within 48 hours of receipt to the advisors and to the SEAS Online office at [seasdoc@gwu.edu](mailto:seasdoc@gwu.edu). Rejection of two journal articles may be cause for dismissal from the program. Before the candidate defends the dissertation, the article must be accepted for publication.

#### 4.4 Milestone 4—Dissertation and Final Examination

Upon successful completion of all prior requirements, the candidate submits the final dissertation, approved by their advisors, to SEAS Online at [seasdoc@gwu.edu](mailto:seasdoc@gwu.edu). Below are guidelines and instructions for the dissertation defense (final examination).

- Refer to <https://library.gwu.edu/seas-etds> for dissertation format guidelines.
- Once the advisor approves the final version of the dissertation, you forward it to [seasonline@gwu.edu](mailto:seasonline@gwu.edu) requesting an Academic Integrity Review (AIR).
- Upon receiving your final dissertation from you, SEAS Online submits it for AIR. If it does not pass, we notify you asking that any problems be fixed.
- When the dissertation meets AIR requirements, the final examination is scheduled and details are announced by email. At that time, all graduation paperwork and committee information is provided.
- Membership on the committee of examiners is determined by SEAS Online.
- You will submit the dissertation to the committee members by email.
- When the final examination committee is convinced of the quality and originality of the candidate’s contribution to knowledge as well as his or her mastery of the scholarship and research techniques in the field, the committee recommends the candidate for the degree of Doctor of Philosophy.
- Dissertation submission and graduation deadlines (no later than the dates shown) for the final paper to be ready for defense, after AIR approval, are:

<b>Semester</b>	<b>Completion Deadline*</b>
Spring	March 15
Summer	August 1
Fall	December 1

\*Deadline to have the final paper ready for defense, including academic integrity review, in order to defend/graduate in the semester listed.

- After a successful dissertation defense, students must submit the advisor-approved final version to GW's ETD system. Before submitting, dissertations must properly formatted, following the GW ETD Formatting and Submission guidelines.

#### **4.5 A Note on Time to Completion**

The SEAS Online Doctor of Philosophy degree program is designed for the student to complete all milestones in under 4 years. Candidates who do not successfully complete the requirements within five years will have the option to have their work transferred to a professional degree program.

#### **4.6 A Note on Academic Integrity**

All student papers (journal articles and dissertations) must pass AIR before being submitted outside the university. It is the responsibility of the student to submit these items to the SEAS Online Office at [seasonline@gwu.edu](mailto:seasonline@gwu.edu) for AIR before submitting them to an approved journal. Papers should be approved by the advisors before the student submits them to SEAS Online for AIR. Once the advisors approve the final version of a paper, the item should be forwarded to [seasonline@gwu.edu](mailto:seasonline@gwu.edu) with a request for AIR evaluation. An email confirmation is sent once the item has passed and is approved for submission.

All papers are expected to use proper citation and pass the AIR without issue. If a paper fails the AIR, the SEAS Online Office provides a courtesy report to the student so that appropriate updates can be made. Submissions with academic integrity concerns that do not pass the review on the 3rd attempt may be forwarded to the GW Academic Integrity Council for additional evaluation. The GW Code of Academic Integrity may be viewed at <http://www.gwu.edu/~ntegrity/>.

In researching the dissertation, and in any published and public results, the candidate must follow GW policies on research conduct and the use of copyrighted material. See <http://my.gwu.edu/files/policies/ResearchMisconductPolicy.pdf> and <http://library.gwu.edu/etd/copyright>.

### **5. Graduation Clearance**

After a successful dissertation defense the SEAS Online Programs Office assembles all necessary documentation for graduation clearance.

Degrees are conferred in January, May, and August. To be recommended by the faculty for graduation, a student must have met the admission requirements of the school in which registered; completed satisfactorily the scholarship, curriculum, and other requirements for the degree; filed an application for graduation by the date requested by SEAS Online; and be free from all indebtedness to the university. Enrollment is required in the semester at the close of which the degree is to be conferred, and all degree requirements must be completed by the last day of final examinations for that semester.

Diplomas are mailed 12-14 weeks following the date of degree conferral, barring unforeseen circumstances. Diplomas are mailed to the Diploma Address in the record. The candidate is responsible to enter this address in the GWeb information system and make any updates. See the following link for graduation application instructions: <https://registrar.gwu.edu/online-graduation-application-instructions>. The Diploma Address must be entered before the application for graduation is submitted.

If you do not receive the diploma by 12-14 weeks after your graduation date, check the online transcript to see if the degree was conferred. If it was conferred, the missing diploma must be reported to the Registrar's Graduation Services Office within 6 months. After that time a fee is charged for a replacement diploma. Also check to see if there are any financial holds on the account. A diploma is only sent if the balance owed is less than \$500. If the degree was not conferred, check with the SEAS Online Office.

## **6. Commencement**

Participation in the annual Commencement ceremonies in May is open to students who have applied to graduate in the current spring semester or who graduated the preceding fall or summer semester.

Doctoral candidates who have not successfully defended their dissertations and completed their ETD Approval form by 1 April may not participate in either the May University Commencement or the SEAS graduation ceremony.

Students who apply to graduate after the published deadlines are not guaranteed Commencement materials and may not be listed in the Commencement program. Find more information about University Commencement at <https://commencement.gwu.edu/>.

## **7. Administration**

The SEAS Online staff is responsible for monitoring and tracking student progress. For this reason, all communication related to the SEAS Online Ph.D. programs must involve SEAS Online ([seasdoc@gwu.edu](mailto:seasdoc@gwu.edu)). Relevant communications comprise advisor/student interaction, and journal, journal reviews and comments on your article, research inquiries, and all other program-related information. Additionally, students are expected to keep the

SEAS Online Office informed of their current contact information, such as email address, home address, and telephone numbers, including cell phone number.

Find the university policies and regulations in the George Washington University Bulletin at <http://www.gwu.edu/~bulletin/> .

The University reserves the right to change courses, programs, fees, and the academic calendar, or to make other changes deemed necessary or desirable, giving advance notice of change when possible.

## Appendix:

### Approved Refereed Professional Journals for Ph.D. Student Publication

Listed below are the journals in which Ph.D. candidates in systems engineering may seek publication. The list was developed and is reviewed regularly by the SEAS Online Programs faculty, and your research must be appropriate for publication in one of these journals. Submission to a journal not on this list is prohibited.

#### *Acceptable Refereed Professional Journals*

The list below suggests appropriate professional journals in which Ph.D. candidates in Systems Engineering or in Engineering Management may seek publication. Others are possible. The candidate must receive approval by the faculty advisor before submitting the article for publication.

- ASEM Engineering Management Journal
- ASCE Journal of Management in Engineering
- Journal of Engineering and Technology Management
- IEEE Transactions on Engineering Management
- Systems Engineering (INCOSE)
- IEEE Transactions on Systems, Man, and Cybernetics, Part A: Systems and Humans
- IEEE Systems Journal
- Journal of Systems Science and Systems Engineering
- Systems Forum
- Decision Analysis
- Computers and Operations Research
- Naval Research Logistics
- Military Operations Research
- Disaster Prevention and Management
- An International Journal Risk Analysis
- Safety Science
- Reliability Engineering and System Safety