

## Modeling & Simulation Ph.D. Candidacy Examination

The Modeling and Simulation Ph.D. candidacy examination is the second major milestone in a student's pursuit of the doctoral degree, and the student must pass the examination (unanimous or no more than one member's dissenting vote) before enrolling for dissertation hours, the third major milestone in the Modeling and Simulation Ph.D. program. The qualifying examination and the candidacy examination cannot occur during the same semester.

The objective of the Modeling and Simulation Ph.D. Candidacy Examination (ModSim CE) is to evaluate a student's preparation to undertake the research in their specific dissertation topic area. It is considered the student's dissertation proposal defense.

### Eligibility:

A student is eligible for the ModSim CE after meeting the following criteria:

1. Passing the ModSim QE, with fulfillment of the criteria thereof;
2. An initial candidacy committee is on file with and approved by the College of Graduate Studies.
3. Six (6) credits or fewer of coursework are remaining in the student's plan of study.
4. The GPS on file with the UCF College of Graduate Studies is up-to-date and correct.

### *BEST PRACTICES:*

- Ensure the faculty chosen to serve on the committee are credentialed as graduate faculty by the College of Graduate Studies.
- Review your GPS with the Modeling and Simulation Graduate Program when you are scheduling the CE with your committee.

### Committee:

The role of the committee is to evaluate the student's CE performance and oversee their dissertation research project. The Evaluation Committee is composed of a committee chair and a minimum of three others, totaling four members. All members must be classified as UCF Graduate Faculty or Graduate Faculty Scholar (<http://catalog.ucf.edu/content.php?catoid=4&navoid=240>) in fields that support the student's research area. The committee members must come from at least two UCF colleges or units. NOTE: The student's candidacy exam committee does not need to be the same as their qualifying exam committee

### *BEST PRACTICES:*

- Choose your committee members in consultation with your committee chair.
- If desired members are not yet credentialed by the College of Graduate Studies, notify the Modeling and Simulation graduate program as soon as possible to pursue approval.
- Submit your "Doctoral and Thesis Advisory Committee" form to Graduate Studies (<https://graduate.ucf.edu/forms-and-references/>) upon completion of the qualifying examination, or no later than three weeks prior to the CE.

### Structure of the Candidacy Examination:

The Modeling and Simulation Candidacy Examination is comprised of three components: a refereed publication (or a manuscript accepted for publication), written dissertation proposal, and oral presentation. The student is advised by the CE Committee Chair in the preparation of all. NOTE: the candidacy can build on or be related to the student's qualifying examination, but is not required.

### *Refereed Publication (or a manuscript accepted for publication)*

To advance to candidacy, students must have at least one refereed publication, or a manuscript accepted for publication, on a topic related to their dissertation research. The student must be the sole or lead author and be a significant contributor to the research and the paper. If the manuscript is accepted for publication, it must be fully (not conditionally) accepted. The publication must be in a journal or a proceedings publication from a professional conference. In both cases, the publication site must be reputable and peer-reviewed. NOTE: If a student chooses to fulfill their QE requirement with a qualifying publication, then they may use that publication to fulfill this component.

### *Written Component*

The written component is the student's dissertation proposal. It must be a publication-quality manuscript. In other words, it should be of publishable quality but does not have to be submitted to an archival journal for publication.

The written component is a technically-written document that, at a minimum, consists of the following 3 discussions:

- **Motivation of the research** The background, motivation and rationale of a topic, idea or concept, including the historical and modern view of the topic and the rationale and need for the proposed research, are clearly and thoroughly explained.
- **Literature review** The review is an extensive summary and synopsis of the area(s) of research, providing a critical and in-depth evaluation of previous related research on the topic. This is an analytical synthesis of previous research, explaining how it integrates into the proposed research investigation. An objective discussion must be clearly outlined, to avoid bias, and areas of agreement and disagreement should be highlighted.
- **Proposed methodology** This methodology must be consistent with the requirements of the field, and clearly address the student's dissertation research hypothesis. It is customary to include any preliminary modeling, validation, experimentation and results in this discussion, showing potential strengths and weaknesses in the methodology.

The complete document must be submitted to all CE Committee members for their careful review and evaluation **at least two weeks** in advance of the oral presentation.

### *Oral Presentation*

The oral component is a professional conference-level presentation by the student to the CE Committee summarizing the written proposal. The student is expected to work with the CE Committee chair to develop a presentation using a format appropriate to the Modeling and Simulation disciplinary criteria. The oral examination must include a question-and-answer period in which the student defends research decisions and receives feedback from the CE Committee.

The presentation must take place during an academic term (fall, spring, or summer) in which the student is enrolled. The oral component of the examination must take place on campus. If a student wishes to present during a semester break and/or at another UCF campus or affiliated property, the student must acquire approval from the Modeling and Simulation Graduate Program before final scheduling.

The oral examination must be scheduled so that all committee members are physically present. If necessary, no more than one member (not the CE Committee chair nor the student) shall participate in the oral presentation remotely via web conferencing technology. If this is the case, the student must report the remote participation to the Modeling and Simulation Graduate Program so they can assist with resources to ensure the member's ability to engage in the discussion and evaluation.

The student must notify the Modeling and Simulation Graduate Program of the candidacy examination, including the written component of the examination, **at least two weeks in advance**. A sample announcement is attached. If the presentation is cancelled or rescheduled, the student will inform the ModSim Graduate Program immediately.

*BEST PRACTICE:*

- Treat the oral component of the candidacy examination as a trial run for the final dissertation defense

**CE Evaluation and Reporting:**

After the oral presentation, each committee member will assess the three components of the qualifying examinations. Then, the committee will deliberate and arrive at a consensus regarding the student's ability to perform their dissertation research project. The grading outcome of the CE will be one of the following two outcomes:

- **Pass:** The student has successfully completed the CE requirement and is advanced to the next level of their doctoral research. The "Candidacy Assessment" form must be submitted to the Modeling and Simulation Graduate Program before the published deadline in order for the student to enroll into dissertation hours.
- **Fail:** The student did not meet the requirements for candidacy and will be required to retake the candidacy examination in a future semester. The student has one more opportunity to complete the CE successfully.

After deliberation, the CE Committee will complete the candidacy assessment form (each member doing their portion), review their assessment and result with the student, and provide the document to the Modeling and Simulation Graduate Program for university reporting and inclusion with the student's doctoral file.

**Attachments:**

Sample candidacy examination announcement  
Candidacy Examination Assessment form

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**From:** [student]  
**Sent:** Wednesday, September 18, 2019 8:14 AM  
**To:** ModSim Graduate Program Director  
**Cc:** ModSim Academic Coordinator; student's committee chair  
**Subject:** CANDIDACY EXAMINATION ANNOUNCEMENT: [insert student's name here]

The candidacy examination for [INSERT STUDENT'S NAME HERE] has been scheduled.

Date: [insert date of CE]  
Time: [insert time of CE]  
Room: [insert location]

EXAMINATION TOPIC: [Insert title of dissertation research proposal presentation here]

[provide a short synopsis of proposal presentation here]

Candidacy Committee:

[insert chair's name here], Chair, [insert UCF department affiliation here]  
[insert member's name here], [insert UCF department affiliation here]  
[insert member's name here], [insert UCF department affiliation here]  
[insert member's name here], [insert professional or UCF department affiliation here]

A copy of the written component of the examination is attached to this message and was delivered to each committee member on [insert date of delivery here].

Approved for submission by [insert chair's name here], Committee Chair, on [insert date of approval here].



Candidate Name  
(Please Print):

Date of  
Assessment:

Program Admit  
Term:

Outcome  
(Pass/Fail):

Assess the candidate listed above according to the following outcomes and measures.  
Performance rating scale: 1-Poor, 2-Fair, 3-Good, 4-Excellent, 5-Outstanding  
**Committee chair should average scores of all evaluators and enter the value in the appropriate field below.**

Outcome	Measure	Member #1 (name): _____	Member #2 (name): _____	Member #3 (name): _____	Chair (name): _____	Overall Assessment (average)
<b>Core Competencies &amp; Interdisciplinarity</b>	Understands fundamentals of M&S as an interdisciplinary field					
	Demonstrates knowledge of major and minor topic area(s) of work					
<b>Communication</b>	Writing & organization quality					
	Oral presentation quality					
<b>Research Potential &amp; Performance</b>	Demonstrates sufficient awareness of relevant literature					
	Demonstrates sufficient analytical thinking and research skills					
<b>Proposal Preparation</b>	Motivated the proposed topic well					
	Demonstrated strong understanding and awareness of relevant extant literature					
	Provided a sufficiently clear and attainable methodology consistent with the requirements in the topics major field of study					
<b>Ability &amp; Preparedness</b>	Prepared for employment					

Candidate Name  
 (Please Print):   
 Date of  
 Assessment:

Program Admit  
 Term:   
 Outcome  
 (Pass/Fail):

Research Activity	Submitted	Accepted	Rate
Number of conference presentations since admit term			
Number of journal publications since admit term			

**Signature**

**Printed Name**

**Committee Chair:** \_\_\_\_\_

\_\_\_\_\_

**Committee Member:** \_\_\_\_\_

\_\_\_\_\_

**Committee Member:** \_\_\_\_\_

\_\_\_\_\_

**Committee Member:** \_\_\_\_\_

\_\_\_\_\_

**Program Director:** \_\_\_\_\_

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