

EME MS Thesis Final Oral Examination Policy

Purpose

To establish the content, form, scheduling, and reporting requirements for MS Thesis Final Oral Examinations in the Energy and Mineral Engineering Department.

Academic Goal

The purpose of these final oral examinations is to assess the scholarly attainment of the student and determine, together with an assessment of the dissertation, if the student should be awarded the Master of Science.

Scope

All EME MS Thesis students.

Background

The final oral examination is the culminating summative assessment for the MS thesis option student in Energy and Mineral Engineering, and along with the dissertation, determines if the student should be awarded the MS. In Energy and Mineral Engineering, successful MS students will demonstrate their capabilities in the following areas:

- **KNOW:** Graduates will be able to demonstrate deep understanding and proficiency in project evaluation methods, optimization and application of mechanistic, thermodynamic, fluid flow, and kinetic analysis methods for integrative design of energy and mineral engineering systems.
- **CREATE:** Graduates will demonstrate proficiency in designing and executing a research plan to address real-world problems in the field of energy and mineral engineering and economics.
- **CRITICAL THINKING:** Graduates will be able to review and critically analyze work by others in the broad area of energy and mineral engineering and economics.
- **COMMUNICATE:** Graduates will be able to effectively communicate their research findings to scholars in the field and broad audiences through formal presentations and written works.
- **PROFESSIONAL PRACTICE:** Graduates will demonstrate a commitment to conduct themselves in accordance with the highest ethical standards and active engagement in service to the profession and society.

The Penn State Graduate School policies previously set limits on remote participation such that only a single committee member could participate in comprehensive via teleconference or video conference. The examinee and all other committee members were required to be present in-person on campus. During the COVID-19 pandemic, the Graduate School relaxed these policies allowing all committee members and PhD student examinees to participate in

these exams remotely via video conferencing. However, beginning in Fall 2022, these flexible remote participation guidelines were rescinded, and the policy reverted to its previous form. Effective 8 May 2023, the Penn State Graduate School revised final oral exam policy permits departments to establish their own guidelines on remote or in-person participation for these exams.

Related University and Graduate School Policies

GCAC-642 Culminating Experience – Research Master’s

Policy Statement

1. The responsibility for scheduling the final oral examination rests with the student and the MS committee chair/research adviser.
2. The following limits on scheduling final oral examinations apply:
 - a. A student must be in good academic standing with an overall GPA of at least 3.0.
 - b. A student must either have completed all required coursework or be enrolled in sufficient credits at the time of the examination to have completed all required coursework by the end of the current semester.
 - c. The student must be enrolled full- or part-time.
 - d. The examination must be scheduled at least two weeks prior to the date of the examination.
3. The student and adviser must agree on the mode of the examination including all in-person, all remote, or hybrid (partially in-person and remote).
 - a. Those participating remotely must use University-licensed interactive audio-video technology, where possible. If unable to connect with video, audio-only participation is allowed.
 - b. When the student and adviser cannot agree on the mode of the examination, the EME Associate Department Head for Graduate Studies will make the final decision. Either the student or adviser can appeal the decision of the EME Associate Department Head for Graduate Studies to the EMS Associate Dean for Graduate Education and Research (ADGER).
 - c. The participation mode must be communicated to all committee members at the time of scheduling, at least two weeks prior to the date of the examination.
 - d. Unanticipated changes to the examination mode that occur after scheduling for any reason (due to student or committee member travel disruptions, for example) must be agreed to by the student and adviser and a majority of the examination committee. If agreement cannot be reached, the EME Associate Department Head for Graduate Education will make the final decision. Either the student or adviser may appeal the decision of the EME Associate Department Head for Graduate Studies to the EMS Associate Dean for Graduate Education and Research (ADGER), whose decision will be binding on the student and the committee.
4. All committee members must participate in the examination.
5. Prior to the examination, the student shall provide a written thesis to their committee that describes the scope of their research activities to be evaluated for earning the MS.

6. On the date of the examination, the student examinee will conduct a public oral presentation of their research. This presentation will be followed by a closed question-and-answer session between the committee and the student which may cover details , design, motivations, findings, and conclusions of the research.
7. The scope of the examination shall consist of an evaluation by the committee of the overall research accomplishments of the student as described by their oral presentation, answers to questions during the closed session, and their written thesis. The committee members will evaluate the student's attainment of the following standards:
 - a. The student has successfully conducted original research in their field of expertise.
 - b. The student has appropriately applied and interpreted methodologies from the current state of art in their field of expertise.
 - c. The student has placed their research and its conclusions within the existing body of literature.
8. A favorable vote of at least two-thirds of the committee members is required to pass the examination.
9. The results of the examination must be reported, regardless of the outcome, within five business days following the end of the examination.

Procedure

Students and MS committee members must follow the following department procedures when preparing for, announcing, conducting, and reporting the results of these examinations:

- EME MS Thesis Final Oral Examination Procedure

Revision History

21 APR 2023	Original publication of this policy. Accepted based on a vote of the EME department graduate faculty on 21-APR-2023. No previous documented comprehensive exam policy existed.
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