

**Missouri University of Science & Technology**  
**Department of Mining and Nuclear Engineering**

**Graduate Degree Requirements in Mining Engineering**

The following are requirements for graduate degrees in Mining Engineering, which are not included in the Graduate Catalog. The requirements for the Ph.D. and D.E. Qualifying Examination, to be taken prior to enrollment or during the first year of residence, are available from the Department.

The application for admission to the graduate program must be accompanied by a letter addressed to the Department Chair, giving a brief summary of the applicant's background and the specific areas of research interest, if known at the time. The Verbal, Quantitative, and Analytical Writing portions of the Graduate Record Examination must be taken. International students must take the examination before admission, and have a GRE Quantitative (Q) score of at least 148, and Analytical Writing Score (AW) of at least 3.5 is required. National students must take the GRE before the end of their first semester on campus. The student shall have a Bachelor's degree in engineering or physical sciences equivalent to one of those offered at S&T.

During the early part of the first semester on campus, the new graduate student should meet with all the members of the departmental faculty to learn about their various areas of expertise. The student selects an advisor of his/her choice. The Chair may appoint a temporary advisor at the beginning to assist with scheduling and early program direction.

All Major Advisors for Graduate Students in Mining Engineering will be Members of Missouri S&T Graduate Faculty and the Mining Engineering Faculty. Adjunct Faculty Members will only be Co-Advisors.

Engineering graduates with undergraduate deficiencies in Mining Engineering shall make up, at least, the following core courses in Mining Engineering: Min Eng 5113, Min Eng 5932, Min Eng 5933, Min Eng 5823 and Min Eng 5742. Physical science graduates shall make up, at least, Civ Eng 3330, and Mech Eng 2340 in addition to the core Mining Engineering courses listed above. Prerequisites for these courses must be satisfied, unless individually waived by the instructor. *These deficiencies will be determined before admission or during the first two weeks of enrollment in the first semester. The successful completion of these courses shall be credited to the requirements for the graduate program a student is enrolled in at the time of course registration.*

Mining Engineering does not permit the use of the non-thesis option for the M.S. degree. Students with B.S. degrees and cumulative GPA 3.50/4.00 can enroll directly in the Ph.D. degree program. Students who obtain a cumulative GPA 3.75/4.00, after completing the course requirements in the M.S. degree program, may transfer and complete the requirements of the Ph.D. program without completing the M.S. program.

*Each student will work with his/her advisor to determine the courses that will be taken to satisfy course-hour requirements. The courses selected should be relevant to his/her area of specialization and designed to enhance fulfillment of his/her research requirements.*

MS students must enroll in the seminar course, Min Eng 6010, at least once during the degree program. PhD students must enroll in Min Eng 6010, for at least three semesters during their program. Each student is required to attend and participate in all the graduate seminars each semester he/she is on campus.

PhD students must complete either Research Methods (Min Eng 6992) or Philosophy of Scientific Research (Chem Eng 6340, Civ Eng 6940, Env Eng 6940, Elec Eng 6810, Comp Eng 6810) within the first two years of candidacy.

PhD students are required to take at least three mining engineering courses as part of their first 15 credit hours. These three courses will be used as a basis for the qualifying examination if a student fails to obtain a minimum GPA of 3.00/4.00 for the first 15 credits in the program.

PhD students will complete a comprehensive examination at least 12 weeks before the final oral examination of the PhD dissertation scheduled date.

**Missouri University of Science and Technology  
Department of Mining and Nuclear Engineering**

**Milestones for the M.S. Degree Program in Mining Engineering**

- 1. Finalize Course Deficiencies (approval by Chair and Major Advisor if known)**  
Meet with Chair or representative if not finalized prior to arrival; faculty approval required  
Time: Within first two weeks of arrival
- 2. Meet with All Faculty**  
Time: Beginning of the first semester  
Information: Learn faculty areas of expertise
- 3. Appoint major advisor (by Graduate Coordinator if required)<sup>1</sup>**  
Time: Beginning of the first semester  
Information: Read departmental M.S. Degree Handout (regarding requirements) and the Graduate Catalog section on Master of Science Degrees
- 4. Selection of Committee Members and Preparation of Proposed Program for MS Degree**  
Time: Semester in which student completes the first 15th credit hours (within 6 weeks) Information:
  - a. Review this Policy and the Graduate Catalog
  - b. Graduate Form I, Proposed Course of Study (approval by Major Advisor, Committee, Chair, and VP of Graduate Studies is required)
  - c. Graduate Form I-A, Changes in Approved Program (approval by Major Advisor, Committee, Chair, and VP of Graduate Studies is required, as needed)
  - d. Refer to Graduate Bulletin for course requirements
  - e. Regulations and specifications for theses and dissertations (available at <http://grad.mst.edu/currentstudents/thesisdissertationinformation/formatting/>)
- 5. Completion of Final Draft of MS Thesis**  
Time: At least 3 weeks before oral defense  
Information: Submit to committee members and mining faculty
- 6. Conditional Approval of Final Draft of MS Thesis**  
Time: At least 7 days before oral defense  
Information: Conditional approval of M.S. Thesis pending Oral Defense (approval by Major Advisor and Committee)
- 7. Final Examination**  
Time: According to date approved in Item 6  
Information: Graduate Form II, Report on Examination for Masters Degree (approval by Major Advisor, Committee, Chair, and VP of Graduate Studies is required) and GLO Rubric (filled by members of Advisory Committee)
- 8. Graduation**  
Time: Upon approval of final oral examination  
Information: An application for graduation should have been submitted earlier in the semester

---

<sup>1</sup> This issue applies to an M.S. student, who at the time of admission, does not have a Major Advisor

# Milestones for the PhD Program in Mining Engineering

## 1. Course Deficiencies

Finalize all course deficiency requirements if not already done prior to arrival (approval by Chair or and Major Advisor if known)

Time: Within first two weeks of arrival

## 2. Meet with All Faculty

Time: Beginning of the first semester

Information: Learn faculty areas of expertise

## 3. Appointment of Major Advisor

Appoint Major Advisor for Ph.D. Student (by Graduate Coordinator, if required)<sup>2</sup>

Time: Beginning of the first semester

Information: Read departmental Doctor of Philosophy Degree handout (regarding requirements) and the Graduate Catalog section on Doctor of Philosophy Degrees

## 4. Departmental Qualifying Examination

Time: First Year

Information:

- a. The Department shall consider the completion of the first 15 credit hours of graduate course work with a 3.00/4.00 cumulative GPA, or better, to be sufficient to satisfy this requirement.
- b. Students who obtain a cumulative GPA between 2.75 and 2.99 for the first 15 credit hours shall take a written topical examination covering three mining engineering topics (these shall be chosen from any three courses taken by the student at that time). The student shall submit a written request for the topical examination to the Department Chair. A score of 80% or higher on the topical examination shall be deemed a "Pass". If a student fails to obtain at least 80% on the first attempt, the student shall be given a second chance. Failure to obtain the passing mark of 80% on the second attempt shall result in the student's status being changed to a MS student.
- c. Students who obtain a cumulative GPA between 2.50 and 2.75 for the first 15 credit hours shall have their status changed to MS students.
- d. Students who obtain a cumulative GPA below 2.50/4.00 for the first 15 credit hours shall be dropped from the mining engineering graduate program.
- e. Graduate Form IV Report on Qualifying Exam (approval by Chair and VP of Graduate Studies is required)

The Graduate Form IV will be completed after satisfying the qualifying examination requirements.

## 5. Selection of Advisory Committee Members & Preparation of Program of Study

Time: Semester immediately after passing the Qualifying Examination

Information: Graduate Form V/V-A, PhD/DE Advisory Committee (to be completed)

- a. Review this Policy and the Graduate Catalog
- b. Graduate Form V, Proposed Program for PhD (approval by Major Advisor, Advisory Committee, Chair, and VP of Graduate Studies is required)
- c. Graduate Form V-A, Changes in Approved Program (approval by Major Advisor, Advisory Committee, Chair, and VP of Graduate Studies is required, as needed)
- d. Refer to Graduate Bulletin for course requirements
- e. Regulations and specifications for theses and dissertations (available at <http://grad.mst.edu/currentstudents/thesisdissertationinformation/formatting/>)

---

<sup>2</sup> This situation applies to Students without Major Advisors at the time of Admission.

**6. Comprehensive Examination (Written and Oral Components)**

Time: Upon completion of course work; must be completed at least 12 weeks before Final Oral Examination  
Information:

- a. Submit a Ph.D. Research Proposal in the form of a funding proposal to the student's Advisory Committee with the consent of the student's Major Advisor. The student shall select a particular request for proposal and write a proposal that meets its requirements (except for requirements that are not reasonable for a PhD candidate, as determined by the Major Advisor).
- b. The Committee shall approve or reject the Ph.D. proposal based on originality and potential impact on the specialty area. A proposal shall be deemed to have been accepted if all but one of the Advisory Committee members approves the proposal. The student shall re-submit the proposal if the Committee rejects the proposal. Only students who have their proposals accepted can proceed to the next stage of the Comprehensive Examination.
- c. Undergo an Oral Examination of the Ph.D. Proposal, revised based on the Advisory Committee's feedback on the written proposal.
- d. Complete Graduate Form VI, Report on Comprehensive Examination after satisfying the requirements of the oral Ph.D. Comprehensive Examination (approval by Advisory Committee, Chair and VP of Graduate Studies is required). The Advisory Committee shall fill out the GLO rubric.

**7. Deadlines to be Eligible for Graduation**

Each semester there are deadlines published for submission of the dissertation to Advisory Committee members, scheduling of the oral defense (Final Examination), and submission of the library copy of the dissertation. These can be found at the following website: <http://grad.mst.edu/currentstudents/index.html>

**8. Conditional Dissertation Approval**

Time: At least 7 days before Final Oral Examination

Information: Conditional approval of Ph.D. Dissertation pending Oral Defense (approval by Major Advisor and Committee)

**9. Final Oral Examination**

Time: At least 7 days after Conditional Approval (item 8)

Information: Graduate Form VII (approval by Advisory Committee, Chair, and VP of Graduate Studies is required). The Advisory Committee shall fill out the GLO Rubric.

**10. Graduation**

Time: Upon satisfying all the Requirements of the Final Ph.D. Oral Examination

Information: Submission of an Application for Graduation to the Office of Graduate Studies before the specified Deadline for particular Graduation Date