UNIVERSITY OF NEVADA RENO

MATERIALS SCIENCE AND ENGINEERING

GRADUATE STUDENT HANDBOOK

LAST UPDATE: JANUARY 14, 2019
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1. Program Description

Most fields in science and engineering are concerned with materials, such as plastics or metals, in one way or another, but only materials engineers are experts in the connections between a material's atomic structure and its physical properties as well as the ways changing that structure can affect a material's performance.

Materials scientists and engineers are at the forefront of developing, testing, and applying new materials to better perform in their desired applications (lighter, stronger, chemically resistant, more recyclable, less expensive, etc.). These new materials are used in diverse industries such as health care, manufacturing or energy.

Our mission, as it relates to graduate education, is to provide nationally recognized leadership in engineering practice, research, education, and service in materials science and engineering. We are committed to the generation of new knowledge that has a significant impact in the development and application of existing and new materials. Our program strives to educate high quality engineers with the academic experience and knowledge to become leaders among practicing professionals and in education, research, and service to the materials science and engineering community.

1.1. Program/Student Learning Outcomes (SLOs)

1. Students will have an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
2. Students will have an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
3. Students will have an ability to communicate effectively with a range of audiences
4. Students will have an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
5. Students will have an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
6. Students will have an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
7. Students will have an ability to acquire and apply new knowledge as needed, using appropriate learning strategies
8. Students will have an ability to apply engineering research and theory to advance the art, science, and practice of the discipline

1.2. Graduate Degrees Offered

Graduate programs offered in Materials Science and Engineering include:
Master of Science (M.S.) in Materials Science and Engineering:
The master's degree in materials science and engineering combines upper-level coursework with the opportunity to conduct research on a topic within materials science and write a thesis.

- Thesis option (Plan A)
- Coursework-only, non-thesis option (Plan B)

Doctor of Philosophy (Ph.D.) in Materials Science and Engineering:
The Ph.D. in materials science and engineering is a research-intensive program that prepares students for careers in research and teaching in the field. Students are involved in many aspects of original research, advancing scientific knowledge in specific areas.

Dual (Accelerated B.S./M.S.) Bachelor and Master of Science Degree:
An accelerated BS-MS program enables outstanding students to obtain a both a B.S. degree in Materials Science and Engineering combined with an M.S. degree in Materials Science and Engineering in 5 years.

1.3. Key Graduate School Resources
The below key links are provided by the Graduate School to describe the general UNR policies and procedures for graduate students:

- Graduate School Forms and Deadlines
- Graduation and Deadlines
- Dissertation and Thesis Submission Requirements
- Graduate Assistantship handbook (General rules and policies)

1.4. Graduate Director
The MSE Graduate Director oversees all aspects of graduate education within the department. Some of the Graduate Director’s activities include:

- Overseeing the admissions process; ensuring admission of highly qualified applicants; requesting and justifying admission of applicants not meeting minimum university requirements;

1 [https://www.unr.edu/grad/forms-and-deadlines](https://www.unr.edu/grad/forms-and-deadlines)

2 [https://www.unr.edu/grad/graduation-and-deadlines](https://www.unr.edu/grad/graduation-and-deadlines)


4 [https://www.unr.edu/Documents/administration-finance/hr/hrgraduate/GA_handbook.pdf](https://www.unr.edu/Documents/administration-finance/hr/hrgraduate/GA_handbook.pdf)
● Reviewing and approving programs of study and the composition of advisory/examining committees;
● Reviewing and approving acceptance of transfer credits.
● Graduate student recruitment and promotion of the graduate program.
● Mediating in conflicts between graduate students and their advisor.

Contact Information of the MSE Graduate Director
Dr. Qi An
Office: LME 307
qia@unr.edu
Tel: (775) 784-7789

2. Degree Requirements

2.1. Program of study
A graduate program of study describes the student’s specific plan of courses, research, and related activities. The graduate student’s Advisor, the Graduate Director of the program, and the Advisory/Examining Committee determine the program of study for each degree candidate. This includes the thesis/professional paper option and the acceptable courses for completion of the degree. The Graduate Dean has final approval of the program of study. Only graduate courses are applicable toward the graduate degree (graduate courses are those with numbers in the 600 and 700 ranges). The approved Program of Study Requirements Form, indicating the members of the Advisory/Examining Committee and the courses used to fulfill the degree requirements, must be filed with the Graduate School. The program of study must be approved by the Graduate Dean prior to the student applying for graduation. MS students that do a courses-only option only have to list the graduate director as their advisor on their program of study (no advising committee is required). Changes to the program of study can be made using the change in program of study (Program of Study form ⁵) or Change of Advisory form ⁶ with approval from the graduate director. It is the responsibility of the student and the Advisory/Examining Committee to ensure that the graduate courses in the proposed program of study are consistent with the requirements of the Graduate School and the department.

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⁵ http://www.unr.edu/Documents/graduate-school/program-of-study.pdf
⁶ https://www.unr.edu/Documents/graduate-school/3change-of-advisory-committee.pdf
2.2. Master of Science (M.S.) in Materials Science and Engineering

The master's degree in materials science and engineering combines upper-level coursework with the opportunity to conduct research on a topic within materials science and write a thesis. M.S. degrees are subjected to the general requirements of the University.

Master of Science degrees are offered in two formats, the first requiring a thesis, and the second requiring coursework only. Plan A (thesis) students are given the opportunity to develop a deeper understanding on one specific area in Materials Science and Engineering and perform research or design activities culminating in a thesis. Plan B (coursework only) students typically study a more broad range of topics in different subjects in Materials Science and Engineering with less emphasis on research activities. The requirements for each type of M.S. are detailed below.

2.2.1. Plan A (Thesis Option) Program of Study Requirements

A Plan A Master’s Degree requires a total of 30 credits beyond a BS degree and includes:

- 24 units of coursework approved as a Program of Study by the student’s Advisory Committee and the Graduate Dean. Of these:
  - A minimum of 12 credits (not including thesis credits) must be taken at 700-level.
  - A minimum of 12 credits must be taken from regular MSE “classroom” graduate courses. I.e., other than “individual study” in courses such as MSE 695 (Special Problems) or 791 (Special Topics), and courses such as 795 (Comprehensive Examination), etc.
  - Minimum of 6 thesis credits (MSE 797)

- A minimum of 21 credits earned at UNR

- A maximum of 3 credits may be taken with S/U grading.

- A maximum of 9 credits may be completed prior to admission (including transfer credits)

- All requirements (credits) for degree (including transfer credits) must be completed within the period of six years (6) immediately preceding the granting of the degree.

- Continuous enrollment: Minimum enrollment of 3 graduate credits each fall and spring semester

- Students must write and orally defend a thesis that is approved by their advisory committee.

2.2.2. Plan B (Coursework-Only Option) Program of Study Requirements

A Plan B Master’s Degree requires a total of 32 credits beyond a BS degree and includes:

- A minimum of 15 credits taken at 700-level.

- A minimum of 15 credits must be taken from regular MSE “classroom” graduate courses. I.e., other than “individual study” in courses such as MSE 695 (Special
Problems) or 791 (Special Topics), and courses such as 795 (Comprehensive Examination), etc.

- A minimum of 23 credits must be earned at UNR
- A maximum of 3 credits may be taken with S/U grading (including transfer credits)
- A maximum of 9 credits completed prior to admission (including transfer credits)
- All requirements for degree must be completed within the period of 6 years immediately preceding the granting of the degree.
- Continuous enrollment: Minimum enrollment of 3 graduate credits each fall and spring semester

### 2.2.3. Changes of Masters Plan

Changes of Masters Plans have impacts on the students, their advisors, and the program. Students are only allowed to switch between Plan A and Plan B Masters programs with the written permission of their advisor and the graduate director. Plan B M.S. students are typically advised by the graduate director or a designee and do not need to form a review committee.

### 2.2.4. M.S. Program Suggested Course Schedule

This schedule is merely a suggestion and can vary depending on your advisor (Plan A) and course availability etc. Note that 9 credits are required for full-time status in each semester.

**Plan A (30 credits)**
- 1st semester: 9-12 credits of 600/700 level courses (including thesis credits)
- 2nd semester: 9-12 credits of 600/700 level courses (including thesis credits)
- 3rd semester: 9-12 credits of 600/700 level courses (including thesis credits)

**Plan B (32 credits)**
- 1st semester: 9-12 credits of 600/700 level courses
- 2nd semester: 9-12 credits of 600/700 level courses
- 3rd semester: 9-12 credits of 600/700 level courses

### 2.3. Doctor of Philosophy (Ph.D.) in Materials Science and Engineering

The Department of Materials Science and Engineering at the University of Nevada, Reno offers an in-depth, cutting-edge curriculum for those graduate students seeking the degree of Doctor of Philosophy in Materials Science and Engineering. Doctoral students are given the opportunity to focus on a specific area in Materials Science and Engineering by taking advanced courses and becoming significantly involved in many aspects of original research, advancing scientific knowledge in their field of specialization. Ph.D. degrees are subjected to the general requirements of the University.

### 2.3.1. Ph.D. – Total number of credits needed
The credit requirements for the doctoral program in Materials Science and Engineering are as below. Exceptions for not meeting the below coursework requirements may only be granted with the permission of the major advisor and the Graduate Director for the MSE program.

A PhD requires a total of 72 credits beyond a BS degree and includes:

- 48 units of coursework approved as a Program of Study by the student’s Advisory Committee and the Graduate Dean. Of these:
  - A minimum of 30 credits should be in 700-level courses (not including dissertation credits). No more than 18 of these can be carried over from a master’s degree program.
  - A minimum of 24 credits of this coursework must be taken from regular MSE “classroom” graduate courses. I.e., other than “individual study” in courses such as MSE 695 (Special Problems) or 791 (Special Topics), and courses such as 795 (Comprehensive Examination), etc.
  - 24 credits of dissertation work (MSE 799)
  - 6 credits of MSE 795 (Comprehensive Examination)
- A maximum of 24 graduate credits from a completed master’s degree program or previous post-baccalaureate work may be applied to program (this includes grad special, transfer, the total cannot be more than 24 credits).
- A maximum of 9 graduate credits of S/U grading (including transfer credits)
- Fulfill residency requirement; two consecutive semesters (fall/spring or spring/fall) of at least nine (9) graduate credits each; (students on 20hr/week assistantships require six (6) credits each semester (fall/spring or spring/fall)
- All course work must be completed within eight years preceding the awarding of the degree. Credits applied towards a doctoral degree from a completed master’s degree are exempt from this eight-year limit.
- Students must complete a comprehensive examination to evaluate their overall knowledge of materials science and engineering as well as expertise in their areas of focus. The exam has both an oral and a written component.
- Students must write and defend an original, research-based dissertation that contributes to scientific knowledge in the field.
- Continuous enrollment with a minimum of 3 graduate credits each fall and spring semester.
- No undergraduate credits can be applied to any advanced degree program.
- Every graduate course must be completed with a grade of “C” or better.

2.3.2. Doctoral Program Suggested Course Schedule

This schedule is merely a suggestion and can vary depending on your advisor and course availability etc.
3. Transfer of graduate credits

These are credits transferred from another institution. Credits completed at UNR in another program or as a graduate special do not need to be transferred. Transfer credit is requested on the Graduate Credit Transfer Evaluation Request form available on Graduate School website and must be signed by the student, major advisor, and graduate director. Only courses with a grade of "C" or better may be transferred to a master's program; only courses with a grade of "B" or better may be transferred to a doctoral program. Transfer credits applied to a master’s program must comply with the time limitation on master’s work (6 years). Thus, if a student took a course five years prior to admission, they would have to complete the degree within one year for the course to apply to the degree. Credits from a completed master’s degree will be exempt from the 8-year time limitation for those students earning a doctoral degree. No more than nine (9) credits completed either prior to admission to a graduate program or transferred from another institution may be applied to a master's degree. For doctoral programs a maximum of twenty-four (24) credits from a previously completed master's program or other post B.S. degree program may be applied. Doctoral students who have completed a master's degree in an appropriate discipline from an accredited institution may, with the approval of their graduate director, receive up to twenty-four (24) credits toward a Ph.D. degree. Students must list each course for which they wish to receive transfer credit on the Credit Transfer Evaluation Request Form. All credits used to satisfy degree requirements for the master's degree, except thesis credits, may be acceptable for transfer.

4. Timeline for degree completion

An “idealized” timeline for degree completion is provided below (see Figure 1) for a few possible scenarios to help students plan their course of study. Additional discussion of the steps, along with web links to appropriate forms and paperwork, are provided below in Section 4.4.

7http://www.unr.edu/Documents/graduateschool/GraduateCreditTransferEvaluationRequest.pdf
4.1. Masters Degree Timeline – Plan A (Thesis Option)

- Declaration of Advisor/Major Advisor/Committee Chair form
- Examining/Advisory Committee Selection
- Program of Study form
- Graduation Application
- Thesis Defense
- Thesis Final Approval Form
- Notice of completion
- Exit Survey
- Commencement
- Alumni activities

4.2. Masters Degree Timeline – Plan B (Coursework-Only Option)

- Program of Study form
- Graduation Application
- Notice of completion
- Exit Survey
- Commencement
- Alumni activities

4.3. Doctoral Degree Timeline

- Declaration of Advisor/Major Advisor/Committee Chair form
- Examining/Advisory Committee Selection
- Program of Study form
- Qualifying Exam
- Candidacy Exam
- Candidacy Admission
- Graduation Application

Figure 1: Recommended timelines for MSE graduate degree programs. For M.S. Plan B, omit the thesis steps.
4.4. **Additional Details on Timeline Steps**

4.4.1. **Declaration of Advisor(s)/Committee Chair(s)**

By the end of the first semester (M.S. and Ph.D.), the student should identify a faculty member who will serve as their primary Advisor. This should be done with the faculty member’s agreement and a Declaration of Advisor/Major Advisor/Committee Chair form should be filed with the Graduate School.

By taking on the role of dissertation advisor, a faculty member agrees to invest a significant amount of time with the student. It is the responsibility of the faculty member to ensure that he/she has sufficient time for this role, including these responsibilities:

- The primary Advisor will advise on and monitor the student’s progress.
- If the student falls behind in achieving any milestones, the dissertation advisor will provide the Program Director with a written memo that indicates this as soon as possible once the milestone is missed. The dissertation advisor may choose to provide written documentation of extenuating circumstances that impose unavoidable delays in academic progress.
- Assist the student in course selection
- Advise on the objectives, methods, and interpretation of the student’s research project.
- Provide professional mentoring on the publication of the student’s research project.
- Return comments, edits, etc. for all written work submitted by the student in a timely manner.
- Provide a memo to inform the Graduate Program Director when the committee deems the thesis or dissertation project to be ready for defense.

For Doctoral Students:
- Provide input on the written component of the Qualifying Exam
- The advisor will Chair the Qualifying Exam evaluation process

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8 [https://www.unr.edu/Documents/graduate-school/Declaration-of-Advisor.pdf](https://www.unr.edu/Documents/graduate-school/Declaration-of-Advisor.pdf)
Provide to the student and the Graduate Program Director a memo that documents the outcome of the Comprehensive Examination results.

4.4.2. Examining/Advisory Committee Selection

Ph.D. and M.S. Plan A degrees require the formation of an Advisory Committee prior to the submission of their Program of Study to the Graduate School. The roles and makeup of this committee are described below in Section Error! Reference source not found.. These committees should generally be established by the end of the second semester (both M.S. and Ph.D.). These deadlines are approximate and intended to prepare for involvement of the committee in later steps of the degree process.

It is the responsibility of the advisory committee to:

- Return comments, edits, etc. for all written work submitted by the student in a timely manner.
- Attend committee meetings to provide input and guidance to the student.
- Meet with the student outside of committee meetings on an as-needed basis.
- Serve on the Comprehensive Exam evaluation committee.
- Serve on the Dissertation examination committee.

4.4.3. Program of Study

By the end of the second semester (M.S.) or fourth semester (Ph.D.), the student should work with their Advisor and examining committee to develop a Program of Study in which all courses that have been or will be taken for the degree are listed and confirmed to satisfy the requirements of the degree. For the case of Plan B Masters degrees, this should be done with the Graduate Program Director (or designee) instead of an advisor/committee. The Program of Study form ⁹ should be filed with the Graduate School. If the student’s activities deviate from the Plan of Study, a revised form should be filed with the Graduate School.

4.4.4. Qualifying Exam (Doctoral Only)

The Qualifying Examination (Stage 1 of Comprehensive Exams) should be taken by the end of the student’s first year after starting their program of study (whether starting with a B.S. or M.S.). This examination is described in more detail in Section Error! Reference source not found..

4.4.5. Candidacy Exam (Doctoral Only)

The Candidacy Exam (Stage 2 of Comprehensive Exams) should be conducted within 2 semesters after passing the Qualifying Exam (Stage 1). This examination is described in more detail in Section Error! Reference source not found..

4.4.6. Candidacy Admission (Doctoral Only)

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⁹ http://www.unr.edu/Documents/graduate-school/program-of-study.pdf
After successful completion of the Comprehensive Exam (including both the Qualifying and Candidacy Exams), the student must file a Doctoral degree admission to candidacy form \(^{10}\) with the graduate school.

### 4.4.7. Graduation Application

Every candidate for a degree must formally apply for graduation through MyNevada and pay the non-refundable application fee (currently $75). The deadline to apply for Spring Graduation is around March 1, Summer Graduation is June 1 and Fall Graduation is October 1. The graduation application is good for one semester only. To submit an application for graduation, log in to MyNevada and search for Graduation. Select the "Apply for Graduation" task and follow the steps. Make sure you select the term you will be finishing all requirements for your degree.

Completing all the requirements for your degree may involve:

- Completing all course work and having final grades filed
- Successfully completing your comprehensive examination
- Defending your thesis or dissertation, making all necessary modifications and submitted the final work to the Graduate School
- Filing all outstanding paperwork (notice of completion, etc.)

After you have completed all requirements and submitted all necessary documents, you should check your transcript after the semester ends to ensure that grades have been received for all course work. If, for example, you take a course in your final semester that does not apply to your degree requirements and receive an “I – Incomplete” grade in that course, you will NOT be able to graduate: grades must be received for all course work regardless of whether or not the course applies to fulfilling degree requirements. If you’ve finished work for a previously received “I” grade, you should check your transcript to ensure that the instructor has actually filed a final grade for that course. There are cases where courses exceed the time limit for the degree or that grades received for particular courses do not meet minimum university standards (i.e. receiving a “C-” in a course). In these instances, the student must meet with their graduate director to explore corrective measures such as petitioning for an extension of the time limit or substituting an appropriate graduate course for another.

### 4.4.8. Thesis/Dissertation (except for Plan B M.S.)

A thesis or dissertation involving original research or design in Materials Science and Engineering completes the Ph.D. and Plan A M.S. programs. This involves preparation of comprehensive thesis document and a defense that must be held as a public oral examination, which is announced via posting and electronic mail at least one week in advance. The announcement must include the title and abstract of the work, the date, time and place of the exam, and the names of the student and of the committee chair. A

\(^{10}\)https://www.unr.edu/Documents/graduate-school/17doctoral-degree-admission-to-candidacy-updated.pdf
Successful dissertation defense is reflected by no more than one negative vote from a member of the advisory/examining. If two negative votes are cast – regardless of the total number of committee members – the defense is unsuccessful. At the discretion of the committee, the candidate may be permitted an additional attempt to conduct a successful defense.

In preparation for the defense, students should work to provide review copies of the thesis or dissertation document to their committee with sufficient time for them to review it and provide actionable feedback to the student. The student should also be working with their committee to schedule a defense date and reserve a room for the event well in advance of the defense. As these often occur at the busy end of a semester, extra planning may be required.

Typically, following the defense, the student will work with the assembled committee to clearly lay out any required final steps, and arrange for approval signatures with enough time to meet the Graduate School’s deadlines (assuming the defense is successful). Defending in the last two weeks before the due date is definitely cutting it close in the event that corrections, edits, or even additional work is deemed to be needed for completion. Thus, students are encouraged to schedule their defense well ahead of the end of the semester when faculty are often too busy and finding a time for all members to assemble may be difficult.

For degrees requiring a thesis or dissertation, these are typically due to the Graduate School at the same time as the Notice of Completion, with all required signatures. See Graduation Deadlines website for exact dates. Dissertation and Thesis Submission Guidelines are provided by the Graduate School.

4.4.9. Thesis/Dissertation Final Approval Form

Once the student has completed any required changes to the thesis/dissertation document it should be presented as a final copy to their advisor (chair of the committee). At this point, the Thesis/Dissertation Final Approval form should be signed and submitted with the thesis/dissertation document to the Graduate School without any further changes.

- Master’s Thesis Final Review Approval form
- Doctoral Dissertation Final Review Approval form

4.4.10. Notice of Completion

The Notice of Completion Form should be completed (with signatures) after all requirements have been met. This is typically done following a successful completion of

the thesis/dissertation document and defense. See Graduation Deadlines website for exact dates.

- Masters Notice of completion  
- Doctoral Notice of completion

4.4.11. Exit Survey

After submission of all required forms and documents, graduate students are asked to complete an Exit Survey form.

4.4.12. Commencement

All graduating graduate students can participate in commencement activities and should refer to the Commencement Checklist for additional details and instructions.

Graduating Doctoral students are accorded special recognition during commencement exercises by participating in a Hooding Ceremony. They receive their doctoral hoods from their faculty mentor and Dean. To participate in this ceremony, students must have:

1. Filed an application for graduation for the appropriate semester (fall or spring); and
2. Successfully defended their dissertation and filed the Notice of Completion with the Graduate School at least one week prior to the commencement exercises. Students who complete their degree during the summer session are eligible to attend either the fall or spring commencement exercises.

Commencement exercises are held each December and May. There is a separate commencement ceremony held for advanced degrees conferred in May of each year. The December exercises are combined graduate/undergraduate ceremonies. Doctoral students are “hooded” by their academic advisors. Students and advisors process in and are seated together.

4.4.13. Alumni Activities

The Nevada Alumni Association welcomes all graduates and is a great way to stay connected to UNR and your home program after you graduate.

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16 https://www.unr.edu/grad/forms-and-deadlines/exit-survey
5. Committee Selection Guidelines

The Advisory/Examining Committee approves the student’s program of study, conducts the Candidacy Exam (for Ph.D.), approves the thesis or dissertation, and guides the students through his or her graduate program. The student should maintain close contact with his or her committee, keeping them informed of his or her progress and allowing them ample time to review drafts of the student’s thesis or dissertation. The students should be aware of their schedules when trying to arrange committee meetings and thesis defense. Note that it is the student’s responsibility to make these arrangements.

5.1. M.S. thesis advisory committee

Plan B MS students (coursework-only) do not need to assemble an advisory committee.

For Plan A M.S thesis degrees, the committee should consist of at least three members of the graduate faculty, including two representing the area of specialization and one who is from outside the MSE program to serve as the Graduate School Representative.

Additional requirements for M.S. Thesis committees in the Materials Science and Engineering program include:

- The majority of the M.S. committee should consist of MSE faculty.
- At least two members (which may include the primary advisor) of the M.S. committee should be from the MSE core faculty.

It is acceptable to include members of the committee who are not UNR faculty. However, these should be “additional” members beyond the minimum requirements of UNR faculty participation.

The Graduate School Representative member’s role on the committee is not necessarily to provide subject-matter expertise but rather to ensure compliance with university policy and regulations; to serve as a representative of the Graduate Dean, “outside” the department granting the degree; and to provide an objective, non-partisan, independent perspective. Students may request the appointment of a committee member from the faculty of another university or from a relevant discipline or profession, provided the prospective member has achieved a record of distinction. Formal approval of the student’s Advisory/Examining Committee is made by the Graduate Dean.

5.2. Ph.D. Advisory/Examining Committee

The Advisory/Examining Committee of a doctoral student should consist of at least five graduate faculty members. In addition to the primary advisor as chair, this committee is composed of two or more members from the major department, one or more from departments in related fields, and at least one member of the graduate faculty from outside the student’s major department or program who is the Graduate School Representative (who may simultaneously be the member from outside the department).

Additional requirements for Ph.D. dissertation committees in the Materials Science and Engineering program include:
• The majority of the Ph.D. committee should consist of MSE faculty.
• At least two members (which may include the primary advisor) of the Ph.D. committee should be from the MSE core faculty.

It is acceptable to include members of the committee who are not UNR faculty. However, these should be “additional” members beyond the minimum requirements of UNR faculty participation.

The Graduate School Representative member’s role on the committee is not necessarily to provide subject-matter expertise but rather to ensure compliance with university policy and regulations; to serve as a representative of the Graduate Dean, “outside” the department granting the degree; and to provide an objective, non-partisan, independent perspective. Students may request the appointment of a committee member from the faculty of another university or from a relevant discipline or profession, provided the prospective member has achieved a record of distinction. Formal approval of the student’s Advisory/Examining Committee is made by the Graduate Dean.

6. Comprehensive Exam

Before candidates can formally pursue a Ph.D. in Materials Science and Engineering, they must pass the Comprehensive Examination process, which consists of two stages:

1) The Qualifying Exam (evaluation of the student’s preparedness for Doctoral studies)

2) The Candidacy Exam (presentation and evaluation of the student’s research plans)

6.1. Qualifying Exam (Stage 1 of Comprehensive Exam Process)

The main objective of the Qualifying Exam is to evaluate the student’s foundational mastery of Materials Science and Engineering and readiness to continue on for a Ph.D. The Qualifying Examination should be taken by the end of the student’s first year after starting their program of study (whether starting with a B.S. or M.S.). Immediately in advance of the Qualifying Exam (i.e. during the semester they take the exam), students should enroll in 3 credits of MSE 795 (Comprehensive Examination).

The Qualifying Exam is conducted by a faculty committee that does NOT include the student’s primary Advisor. This committee is assigned and convened by the Graduate Director.

The format of the Qualifying Exam will be a “closed-book” written examination on topics covering the foundations of Materials Science and Engineering and aligned with the program of study. The examination will be confidentially reviewed by the evaluation committee. At the evaluation committee’s discretion, the student may be called to appear before an oral examination where committee members can follow up on the student’s written answers and ask additional questions for the purpose of evaluating the student’s preparedness and aptitude for Doctoral work.
If the student passes the examination, they will be permitted to proceed to the Candidacy Exam phase. If the student does not pass the examination, the committee will offer recommendations to the student, which may include recommending that the student re-take the exam (a maximum of one re-take is permitted), or that they complete their graduate studies with a Master’s Degree (either Plan A or Plan B), or the committee may offer other possible recommendations. The recommendations of this evaluation committee are provided to the Graduate Director.

6.2. Candidacy Exam (Stage 2 of Comprehensive Exam Process)

If/when the student has successfully passed the Qualifying Examination, they are approved to proceed to the next phase of developing a comprehensive research plan (a written proposal) for presentation to their Dissertation Committee, who will evaluate it as the Candidacy Exam. This stage will include both a written research proposal and an oral presentation of the proposal to the Dissertation Committee. The proposal should be initially developed with the input of their Primary Advisor, and should include:

- Thorough review of the literature for the research area
- Research proposal (goals, methodology, research plan)
- Results to date and work in progress (including a timeline)
- Clear identification of the original contributions by the student to the general state of knowledge.
- Work remaining to be conducted

Soon after presenting the research proposal document to the committee, the student should give an oral presentation of their proposed work to the committee (~40-45 minute presentation, followed by open Q&A).

The Candidacy Exam should be conducted within 2 semesters after passing the Qualifying Exam (Stage 1). This is to provide the student with some time to finish framing the research plans but to also help ensure that the student does not progress too far along their research before engaging the Dissertation Committee.

Immediately in advance of the Candidacy Exam (i.e. during the semester they take the exam), students should enroll in 3 credits of MSE 795 (Comprehensive Examination). This will bring the total of MSE 795 credits to six.

One objective of the Candidacy Exam is to engage the committee in the student’s project and provide a mechanism for the committee to begin providing input to the student for the purpose of improving the research agenda. A second objective of the Candidacy Exam is to provide the committee with an opportunity to evaluate the student’s ability to extend traditional “classroom knowledge” into self-directed, original research.

Once both the written and oral components of the Candidacy Exam have been completed, the Dissertation Committee will make an overall decision on whether the student has passed the Comprehensive Examination for the Ph.D. program. Once it has been passed, the student will advance to Admission into Doctoral Candidacy.

Admission into Doctoral Candidacy
Formal admission to candidacy is done at some time after which the student has completed all coursework and passed the two-phase Comprehensive Exam (which may not occur at the same time). It confirms that a student has successfully completed the departmental course requirements (excluding dissertation credits) and university residency requirements. In order to gain admission to candidacy, a student must meet all the below requirements.

1. Hold at least a “B” average in all graduate work;
2. Pass the Comprehensive Examination process (including both the Qualifying and Candidacy Exams)
3. Gain the advisory/examining committee’s formal approval for the program of study, including dissertation development.

After successful completion of the Comprehensive Exam, the student must file a Doctoral degree admission to candidacy form 17 with the graduate school.

7. Thesis/dissertation requirements

Theses and dissertations should comply with the guidelines put forth by the Graduate School. These can be found at the below links.

- MS Thesis Filing Guidelines 18
- Doctoral Dissertation Filing Guidelines 19
- Dissertation Title Form 20

Once all above requirements have been met, Plan A M.S. and Ph.D. students need to submit a Final Review Approval and Notice of Completion form in order to graduate.

- Master’s Thesis Final Review Approval form 21
- Doctoral Dissertation Final Review Approval form 22
- Master’s Degree Notice of Completion form 23

17 https://www.unr.edu/Documents/graduate-school/17doctoral-degree-admission-to-candidacy-updated.pdf
23 https://www.unr.edu/Documents/graduate-school/notice-of-completion-master-degree-updated.pdf
8. Graduate Assistantships

Graduate assistantship positions are offered through various departments and are paid by grants or state funds. Students interested in these positions must contact the department for specific requirements. The Graduate School is responsible for approval of graduate assistantships after a department has requested the initiation of a contract. All positions are contingent upon available funding.

Graduate teaching assistants (GTAs) perform a variety of duties including but not limited to teaching undergraduate classes to grading papers, to conducting laboratories experiments and proctoring exams. Teaching assistants receive special teaching-skills training through the Excellence in Teaching Program in the mandatory course GRAD 701S.

Graduate research assistants (GRAs) perform a variety of duties conducting research in laboratories under the guidance of the principal investigator and/or his designee (who are often their primary advisor). They are expected to take required training, conduct research in safe manner, and record all protocols and results. They are also expected to maintain a backup of all data and results and provide timely reports and presentations to the advisor on as needed basis.

All graduate students holding an assistantship (teaching GTA or GRA) are considered Nevada residents for tuition purposes. Non-resident tuition is only waived for the duration of the assistantship. To be eligible for an assistantship, students must be admitted to a degree-granting program and be in good academic standing. The student must have an overall GPA of at least 3.0 and must be continuously enrolled in at least 6 graduate level credits (600-700) throughout the duration of the assistantship.

State-funded assistantships at UNR (GTA/GRA) may be held for a maximum of: three (3) years for master’s degree students and five (5) years for doctoral degree students.

An important resource for the most updated information on graduate assistantships and policies is available through the graduate school website:

- General information on graduate assistantships (Graduate School) 26
- Graduate Assistantship handbook (General rules and policies) 27

25 https://library.unr.edu/TLT
26 https://www.unr.edu/grad/funding/graduate-assistantships
27 https://www.unr.edu/Documents/administration-finance/hr/hr_graduate/GA_handbook.pdf
8.1. Graduate Employment: Rights and Responsibilities

Graduate Assistants play an invaluable role in the university’s instruction and research endeavors. In their roles as graduate assistants, graduate students should be treated with respect as junior colleagues, and receive guidance in the performance of their duties as necessary. Graduate Assistants are classified as professional employees, as such they do not work according to the clock, but rather, according to performance of a specified job. Full time Graduate Assistants work on average (during the semester) 20 hours per week for a 0.5 FTE employee. Additional hours may be available during semester breaks.

8.1.1. Rights

Graduate students have the right to fair and equitable treatment as employees. Such rights are described in the campus’s Affirmative Action Policy statement. Graduate Assistants have the right to discuss and clarify the conditions of their employment and expected workload with their supervisor. Graduate Assistants have the right to expect the work requirements to be consistent with professional expectations. Consequently graduate assistants should not be assigned, as part of their employment, inappropriate work tasks as house-sitting, babysitting, etc. for their supervisor.

8.1.2. Responsibilities

As professional employees, graduate assistants should conduct themselves appropriately (dress, collegial relations, punctuality, dependability, etc.) in the work situation. As professional employees, graduate assistants will strive to fulfill the agreed upon work obligations. As professional employees, graduate assistants have the responsibility to report inappropriate work expectations or working conditions to the Associate Dean of the Graduate School and/or other appropriate campus entities.

8.2. Assistantships with the CME Department

To inquire about a possible Research Assistantship, the student should contact faculty members in the program who work in the student’s area(s) of research. Information on faculty’s research areas is available on the CME Department website. Teaching assistantships are similarly offered to qualified students through the CME Department Chair.

9. Health Insurance

All domestic degree seeking graduate students, who are enrolled in six or more credits (regardless of the course level) in a semester, will be automatically enrolled and billed for

28 https://www.unr.edu/drc/equal-access-policies/affirmative-action-policy
29 https://www.unr.edu/cme/people
the **University sponsored health insurance**\(^{30}\) for each term they are eligible (fall & spring/summer). If a student has other comparable coverage and would like to waive out of the student health insurance, it is the student’s responsibility to complete the University online waiver form\(^{31}\) prior to the deadline. If approved, a health insurance waiver is good for the current academic year only. A new waiver must be submitted each academic year. All international graduate students are required to carry student health insurance, and the cost will be automatically added to your student account. Any international graduate students with insurance questions must contact the **Office of International Students and Scholars (OISS)**\(^{32}\) directly.

### 10. Additional Policies

#### 10.1. Academic Status

All graduate students must maintain a cumulative graduate GPA of 3.0. If their GPA drops below 3.0 they are either placed on probation or dismissed. Undergraduate courses will not count towards graduate GPA.

- **Probation:** students whose cumulative graduate GPA is between 2.99 and 2.31 are put on probation. Students are placed on academic probation for one semester. If they fail to raise their cumulative GPA to 3.0 by the end of one semester, they are dismissed from their graduate program. Thesis, dissertation, S/U graded credits, and transfer credits have no impact on a student’s GPA.

- **Dismissal:** students whose cumulative graduate GPA is 2.30 or lower are dismissed from graduate standing. Dismissed students are no longer in a graduate program but may take graduate-level courses as a Grad Special. Students wishing to complete their degree must obtain approval to take graduate-level courses, raise their graduate GPA to at least 3.0 and then re-apply to a graduate program. Any courses taken to raise their GPA will be included in the graduate special/transfer credit limitation (9 credits for master’s degrees).

#### 10.2. Continuous enrollment

Graduate students must register for a minimum of 3 graduate credits each fall and spring semester until graduation or have an **Application for Leave of Absence form**\(^{33}\) approved by the Graduate Director of the program and the Graduate School. Approved leaves of absence do not abrogate the time limitations on course work (6 years for a master’s degree program and 8 years for a doctoral program). International students may be required to

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\(^{30}\)https://www.unr.edu/Documents/administration-finance/hr/hr-graduate/GA_handbook.pdf  
\(^{31}\)https://studentinsurance.usi.com/errors/waiversessionerror.aspx  
\(^{32}\)https://www.unr.edu/oiss  
\(^{33}\)https://www.unr.edu/Documents/graduate-school/leaveofabsencer_9.23-1.pdf
enroll in nine graduate credits each fall and spring semester depending on the requirements of their visa. There are no minimum registration requirements during the summer. All students holding assistantships (whether teaching or research assistantships) are required to enroll in a minimum of 6 graduate credits each semester they hold the assistantship.

10.3. Enrollment limitations

In each fall and spring semester, graduate students may not enroll in more than 16 graduate credits. In each summer session graduate students may not enroll in more than 6 graduate credits. In each semester they hold an assistantship graduate assistants must enroll in at least 6 and may not enroll in more than 12 graduate credits.

10.4. Leave of absence

All graduate students are required to maintain continuous enrollment of a minimum of three (3) graduate credits each fall and spring semester. A leave of absence is a temporary cessation of study due to medical reasons or other emergencies during which time the students are not required to maintain continuous registration. Students requesting a leave of absence must be in good academic standing and submit a completed Application for Leave of Absence form to the Graduate School before the period of leave begins. Students applying for a leave of absence should not have any “incomplete” grade which could be changed to “F” and have a detrimental impact on their cumulative grade point average. Usually leaves of absence are approved for one to two semesters and may be extended by the student filling an additional leave of absence form. Time spent on an approved leave is included in the time allowed to complete the degree, i.e. six calendar years for the master’s degree and eight calendar years for the doctoral degree. That is, the clock doesn’t stop.

10.5. Academic Standing

Standing: Each graduate course must be completed with a grade of “C” or better for the credit to be acceptable toward an advanced degree. In addition, students must maintain good standing with an overall graduate credit GPA of at least 3.0 on a scale of 4.0.

Probation: Students whose cumulative graduate GPA is one to six grade points below the necessary 3.0 GPA are placed on probation for one semester. If they fail to raise their cumulative GPA to 3.0 by the end of one semester, they are dismissed from their graduate program. Students placed on probation receive a letter from the Graduate School explaining exactly how many credits of “A” are required to raise their GPA to 3.0. Thesis, dissertation, S/U graded credits, and transfer credits have no impact on a student’s GPA.

Reinstatement: Students can request reinstatement to their graduate program after an unapproved Leave of Absence by filing a Notice of Reinstatement to Graduate Standing form with their graduate program. Once completed, the program will return this form to

35 https://www.unr.edu/Documents/graduate-school/Notice-of-Reinstatement-Graduate-Standing.pdf
the Graduate School for final approval. This form allows the program the option to recommend the student be readmitted to their graduate program based on their previous admission or require the student to re-apply for admission which would require him or her to submit a new application for admission and pay the application fee.

**Dismissal:** If the graduate grade-point total is seven or more grade points below the necessary 3.0 GPA the student is dismissed from graduate standing. Also, if the graduate GPA remains below 3.0 for two consecutive semesters the student is dismissed from graduate standing. Dismissed students are no longer in a graduate program and may not take graduate-level courses without the written approval of the course instructor and the Graduate Dean. Students wishing to complete their degree must obtain approval to take graduate-level courses, raise their graduate GPA to at least 3.0 and then re-apply to their graduate program. Any courses taken to raise their GPA will be included in the graduate special/transfer credit limitation (9 credits for master’s degrees).

### 10.6. Getting an M.S. on the way to a Ph.D.

If a student who is currently enrolled in the PhD program wants to earn an MS en route then the student needs to complete a master’s degree program of study in consultation with their advisor. The graduate director and the student’s primary advisor will then send a memo to the Graduate School informing them of this request and the student can then apply for graduation. For either option (thesis, non-thesis) students will only be able to use 24 credits towards the PhD. If they take the thesis option (Plan A), the 6 thesis credits cannot be used towards dissertation credits. If they take the non-thesis option (Plan B), then 8 coursework credits used for the MS degree cannot be used towards the Ph.D..

### 10.7. Completing Two Degrees Simultaneously

Students may choose to complete two master’s degrees at the same time, or complete a master’s degree while working on a doctoral program in a different discipline. Students may not complete two doctoral programs simultaneously.

The students should inform their advisors in both programs of their intent to complete two degrees. This is especially important if they are paid as a GRA, as this may affect the productivity towards the research grant. When completing two master’s degrees at the same time, the student must apply and be accepted to each graduate program; must submit a separate program of study for each degree; must form two separate advisory committees with no more than one member in common; and have no more than 9 credits in common with each program of study.

### 10.8. Changing Advisors

It can happen that your research interests change over time or that the relationship with your current advisor has changed for the worse. Any student is free to change advisors, but changing earlier in your career is generally easier than later. If you are thinking about switching advisors, you can accomplish this the best if you adopt an attitude of respect for the person who initially advised you or recruited you to come to UNR.
The following are general guidelines for switching advisors:

1. Talk to the graduate director (or, in lieu of this, the Department Chair). The graduate director represents the interests of the graduate students and s/he can help you make a better decision whether switching advisors would be good for you. The graduate director can also try to mediate between you and your advisor and help you better understand the pros and cons of changing advisors. This advice is especially important if you are attempting to change advisors toward the final phase of your graduate program.

2. Decide whether you want to switch advisors (do not approach other faculty before deciding).

3. Decide whether you could work with two advisors.

4. Try to work through any differences with your current advisor. Express to your advisor why you are considering a change, discuss whether his/her expectations of you are realistic, and whether they are open to adjusting.

5. Carefully consider the pros and cons of switching advisors as this may involve:
   - You can lose your GRA or GTA position (if your existing advisor provided you with a 10 hour RA ship). Switching advisors is not a guarantee you can maintain your GTA.
   - You need to find a new research topic as continuing your existing research with a new advisor is only acceptable with permission of your old advisor.
   - You may receive an unsatisfactory on thesis/dissertation credits that you are currently taking or a failing grade on an independent study with your current advisor if you do not complete your advisors’ expectation for that semester.
   - If you are a PhD student and you have enough credits, you may need to graduate with an MS degree on your old research topic before starting a new research topic with a new advisor.
   - If you were a GRA, the advisor may still have grant reporting needs that will require you to complete the work and provide a report (or a manuscript).

6. After your decision, approach another faculty member about being an (co-) advisor for you.

7. Frame your approach with positive information, such as new interests and new possibilities. Be professional at all times.

8. Focus discussions on your interests and goals and not on negative incidents or difficulties.

9. Avoid doing or saying anything that could have negative ramifications for your future career.

10. Notify your current advisor and discuss and arrange a timeframe for completing any remaining work with your current advisor before the switch takes place.
11. Arrange a meeting with your new and old advisor to discuss your new topic of research and or overlap on publications in your thesis/dissertation.

12. Regarding Intellectual property claims, carefully consider UNRs intellectual property policy.\(^{36}\)

13. Complete or update any formal paperwork that contains information about your advisor, e.g., advisory forms etc.

### 10.9. Academic Dishonesty

In order to maintain an academic climate conducive to each member's success in the pursuit and transmission of knowledge, the University of Nevada, Reno, has established a set of policies and standards for all of its members to adhere to. For student members of this community, enrollment at the university carries certain obligations related to activities in the academic setting, including behavior inside and outside the classroom. Specific details can be found on the Student code of Conduct website.\(^{37}\)

### 11. Graduate Student Association

The Graduate Student Association (GSA)\(^ {38}\) represents all graduate students and promotes the welfare and interests of the graduate students at the University of Nevada, Reno. The GSA works closely with appropriate university administrative offices, including the Graduate School and Student Services and reports to the President of the University. The GSA government functions through the Council of Representatives, Executive Council and established committees.

Graduate students have the right to form clubs and organizations within their programs, departments, colleges, ethnicities, shared interests, or any other constituencies, for the purposes of academic, professional, or social networking, sharing, and advocacy.

### 12. Acknowledgments

Parts of this handbook’s text have been taken and adapted from UNR’s Graduate Student’s Guide to University, the UNR Graduate School website, handbooks from other programs, and the UNR Graduate Student Association website.

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\(^{36}\) [https://www.unr.edu/Documents/research/oei/ip-ownership.pdf](https://www.unr.edu/Documents/research/oei/ip-ownership.pdf)

\(^{37}\) [https://www.unr.edu/student-conduct/policies/student-code-of-conduct](https://www.unr.edu/student-conduct/policies/student-code-of-conduct)

\(^{38}\) [https://www.unr.edu/gsa/](https://www.unr.edu/gsa/)