

MECHANICAL ENGINEERING

Graduate Program Handbook

University of Nevada, Reno

(Revised May 2018)

The purpose of this Graduate Student Handbook is to provide guidance to students and faculty as students advance through the program. The handbook provides the necessary information for students to understand the requirements, expectations, and opportunities associated with both the specific graduate program and the Graduate School.

1. PROGRAM DESCRIPTION

Brief Description

- The Department of Mechanical Engineering offers Masters of Science (MS) and Doctor of Philosophy (Ph.D.) degrees. The department does not have a language requirement for the Ph.D. degree. The program of courses and research for both the master's and doctoral degrees is tailored to the background, needs and interests of the individual student. Research areas include solid mechanics/design, materials processing and advanced manufacturing, thermo-fluids/energy sciences, and mechatronics/robotics and systems dynamics/controls.

Program/Student Learning Outcomes (SLOs)

- Our program is directed towards preparing motivated students to become professionally competent and capable of independent, self-directed research in one of several sub-disciplines of mechanical engineering, including solid mechanics/design, materials processing and advanced manufacturing, thermo-fluids/energy sciences, and mechatronics/robotics and systems dynamics/controls.
- Upon graduating from our program, our students will have:
- An ability to apply engineering research and theory to advance the art, science, and practice of the discipline;
- An ability to design and conduct experiments as well as to analyze, interpret, apply, and disseminate the data;
- An understanding of research methodology.

Different Tracks Offered

- The Mechanical Engineering Department offers Masters of Science (MS) and Doctor of Philosophy (Ph.D.) degrees. MS has two options: thesis (Plan A) and non-thesis (Plan B).

Contact Information for the Program Director and Other Relevant Personnel

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Note: This handbook lists graduate program academic policies and procedures. It includes information on graduate school policies, degree requirements, timeline for degree completion, committee selection guidelines and comprehensive exam/thesis requirements. Every effort has been made to make this handbook accurate as of the date of publication; however, this handbook does not constitute a contractual commitment. Graduate programs may not offer all of the courses as described, and policies are subject to yearly review and changes with program director and Graduate Council approval.

2. DEGREE REQUIREMENTS

Masters of Science (MS) Degree in Mechanical Engineering

- Both Plan A (requiring the completion of a thesis) and Plan B (non-thesis) master's degree programs are available. All MS degree candidates are initially accepted into Plan B, but may be invited to complete Plan A in cooperation with a faculty research advisor. Graduate students in Plan A are eligible to apply for teaching assistantships. In addition to the requirements for a MS degree established by the Graduate School (for details see graduate catalog), Plan A and Plan B have the following requirements:

Plan A

- **Declaration of Advisor:** Completed [Declaration of Advisor Form](#)¹ must be submitted to Graduate School by the end of the student's second semester.
- **Examination Committee** (refer to Section 5 "Committee selection guideline"): Usually the Committee consists of three members: two (2) ME Department members and one (1) outside member. The Advisor usually serves as the Chair of the Committee.
- **Program of Study:** For MS students, the completed [Program of Study Form](#)² must be submitted to Graduate School by the end of the student's third semester.
- **Coursework:**
 - At least 30 credits of acceptable graduate courses must be completed.
 - At least 21 of those credits must be earned in on-campus courses at UNR.
 - At least 18 credits in the program must be at the 700 level.
 - 6 credits can be earned by enrolling in "Thesis" ME 797.
 - Maximum 6 credits of ME 791 (includes independent study/research and some types of seminar) are allowed.
 - Any transfer credits from another institution must be recommended in the program of study by the advisory/examining committee, and must be officially accepted by the Office of Admissions and Records.

¹ <https://www.unr.edu/Documents/graduate-school/Declaration-of-Advisor.pdf>

² <https://www.unr.edu/Documents/graduate-school/program-of-study.pdf>

- **Thesis Defense:** A thesis and oral presentation are required. Thesis formatting guidelines can be obtained from graduate school. Oral defense is taken after completion of MS work, following guidelines from Graduate School. Typically, at the defense, there is an oral presentation (less than one hour), public questions, private questions with just the committee, and the committee deliberates. Often the committee requests changes to be made to thesis before the thesis is submitted. In the case of unsatisfactory dissertation and/or final exam, the Committee can recommend termination of the student's graduate study or probation with further work in thesis and thesis defense.
- **Application for Graduation:** After successful thesis defense, the student fills out the [Notice of Completion Form](#)³ and obtains final review approval.

Plan B

- **Declaration of Advisor:** Completed [Declaration of Advisor Form](#)⁴ must be submitted to Graduate School by the end of the student's second semester.
- **Examination Committee** (refer to Section 5 "Committee selection guideline"): Usually the Committee consists of three members: two (2) ME Department members and one (1) outside member. The Advisor usually serves as the Chair of the Committee.
- **Program of Study:** Completed [Program of Study Form](#)⁵ must be submitted to Graduate School by the end of the student's third semester.
- **Coursework:**
 - At least 32 credits of acceptable graduate courses must be satisfactorily completed.
 - At least 23 of those credits must be earned in on-campus courses at UNR.
 - At least 15 credits in the program must be at the 700 level.
 - Maximum 6 credits of ME 791 (includes independent study/research and some types of seminars) are allowed.
 - Any transfer credits from another institution must be recommended in the program of study by the advisory/examining committee, and must be officially accepted by the Office of Admissions and Records.
- **Comprehensive Exam:** The Committee decides the format of the comprehensive exam. Usually the comprehensive exam includes a written report and an oral presentation. The report can be a literature review on a specific research topic or a project determined by the Advisor. The oral presentation can be related to the report and questioning about any topic related to coursework in program of study. In the case of unsatisfactory comprehensive exam, the Committee can recommend termination of the student's graduate study or probation with further work in the report and oral presentation.
- **Application for Graduation:** A student needs to take a comprehensive exam, fill out the Notice of Completion form, and obtain final review approval.

Doctor of Philosophy (Ph.D) Degree in Mechanical Engineering

- **Declaration of Advisor:** Completed [Declaration of Advisor Form](#)⁶ must be submitted to Graduate School by the end of the student's second semester.

³ <https://www.unr.edu/Documents/graduate-school/notice-of-completion-master-degree-updated.pdf>

⁴ <https://www.unr.edu/Documents/graduate-school/Declaration-of-Advisor.pdf>

⁵ <https://www.unr.edu/Documents/graduate-school/program-of-study.pdf>

⁶ <https://www.unr.edu/Documents/graduate-school/Declaration-of-Advisor.pdf>

- **Examination Committee** (refer to Section 5 “Committee selection guideline”): The Committee is usually chaired by the dissertation advisor and is formed before the student’s qualifying exam. Usually the Committee consists of five members: three (3) from the ME Department and two (2) outside the Department. All the committee members should be Graduate Faculty at UNR or faculty members at a PhD granting program in the USA. Other people serving in the Committee require prior approvals from UNR Graduate School with recommendation from the ME Graduate Committee. The Committee recommends termination of the student’s PhD study or to re-take a particular exam if the student does not satisfy required course work or a particular exam.
- **Program of Study:** For doctoral students, the completed [Program of Study Form](#)⁷ must be submitted to Graduate School by the end of the student’s fourth semester.
- **Coursework:** A total 72 credits are required.
 - Up to 24 credits can be dissertation (ME 799)
 - Up to 24 credits (no thesis credits) can be transferred from MS study, possibly more if Graduate School approves and they are at “doctoral level”.
 - Up to 6 credits of ME 791 are allowed (includes independent study/research and research seminars).
 - At most 18 credits at 600 level or at least 30 regular course credits at 700 level (excluding ME 791, ME 795, ME 799).
 - Usually minimum 6 regular 3-credit courses (excluding ME 791, ME 795, ME 799) are required for PhD after MS degree.
- **Qualifying Exam:** For students that have started their PhD program before Spring 2018: After major coursework is completed in the first or second year of PhD studies, a student registers for 1-credit course ME795 and takes the FE (Fundamentals of Engineering) exam with a minimum score of 70 in lieu of Qualifying Exam. For students that have started their PhD program in Spring 2018 or later, the new rules of the ME PhD Qualifying exam apply. Please refer to the ME PhD Qualifying Handbook for details.
- **Dissertation Proposal** (Admission to Candidacy): The exam is taken after completion of all the course work. The format the Dissertation Proposal is decided by the dissertation advisor and the examination committee, but typically involves a presentation of past and intended work for the dissertation, followed by questions about those and related topics from the committee members. The committee should ensure that the student has passed the necessary qualifying exams and met the GPA requirement in the core curriculum before advancement to candidacy. The Dissertation Proposal should be completed preferably at least one semester before intended graduation date.
- **Dissertation Defense:** A dissertation and oral presentation are required. Dissertation formatting guidelines can be obtained from graduate school. Oral defense (final exam) is taken after completion of PhD work, following guidelines from Graduate School. Typically, at the defense, there is an oral presentation (about one hour), public questions, private questions with just the committee, and the committee deliberates. Often the committee requests changes to be made to dissertation before the dissertation is submitted.
- **Application for graduation:** The student writes and defends the dissertation, files a notice of completion, obtains final review approval.

3. GRADUATE COURSES OFFERED (All courses are electives.)

⁷ <https://www.unr.edu/Documents/graduate-school/program-of-study.pdf>

- **ME 610 - Introduction to System Control (3 units):** Mathematics of linear systems and their control. Offered: Every Fall
- **ME 614 - Intermediate Heat Transfer (3 units):** Conduction, convection and radiation relationships are derived and applied to complex engineering problems. Offered: Every Fall
- **ME 618 - Air Conditioning Engineering Systems (3 units):** HVAC requirements to produce thermal comfort. Use of psychrometric chart. Design of duct distribution systems. Equipment selection. Building load calculations.
- **ME 620 - Heat Transfer in Renewable Energy Systems (3 units):** Introduction of advanced heat transfer theory and renewable energy systems. Offered: Every Spring - Odd Years
- **ME 622 - Introduction to Robotics (3 units):** Included topics are forward and inverse kinematics, motion kinematics, force/torque relations, trajectory planning, dynamics and control of robots. Offered: Every Spring.
- **ME 631 - Advanced Mechanics (3 units):** Unsymmetrical bending, shear center, strain energy, complementary energy with applications, continuous elastically supported beams, beam columns, buckling of bars, electric resistance strain gauging. Offered: Every Fall
- **ME 632 - Materials (3 units):** Properties of materials as they affect selection and design. Offered: every Spring
- **ME 633 - Introduction of Plasticity and Creep (3 units):** Plasticity and creep theories for selection of materials in modern design. Computer simulations and engineering applications emphasized. Offered: Every Fall - Odd Years
- **ME 644 - Intermediate Dynamics (3 units):** Kinematics and dynamics of rigid bodies in space. General theory of rotating coordinate frames, Eulers angles, Eulers equations of motion, angular momentum, work-energy principles. Offered: Every Fall
- **ME 646 - Composite Materials (3 units):** Stress-strain relations of a lamina; micromechanics and macromechanics of laminate; bending, buckling and vibration of laminated composite-material beams, plates and shells. Offered: Every Fall
- **ME 653 - Mechanical Vibrations (3 units):** Theory of mechanical vibrations with applications to machinery. Includes critical speeds, torsional vibrations, isolation, damping, absorbers, uniform beams, etc. Lectures, experiments, problems. Offered: Every Spring
- **ME 656 - Introduction to Tribology (3 units):** Technological advancements in the areas of friction and wear; surfaces and surface interactions at the micro- and nano-scales; friction and wear of engineering materials as well as influencing factors. Offered: Every Fall
- **ME 667 - Intermediate Fluid Mechanics (3 units):** Fundamental topics including differential form of conservation laws, potential theory and viscous flows. Additional topics may include boundary-layer theory, turbulence, waves, surface tension. Offered: Every Spring
- **ME 674 - Active Solar Engineering (3 units):** Nature and availability of solar energy. Technology of collection and use. Design, construction and testing of solar collectors and systems. Offered: Every Spring
- **ME 675 - Introduction to Combustion (3 units):** Reactive thermochemistry, mass transfer, chemically reacting systems, laminar premixed and diffusion flames, droplet and solid combustion. Offered: Every Fall - Even Years
- **ME 676 - Internal Combustion Engines (3 units):** Otto, and Sterling Diesel cycle engines and gas turbines. Thermodynamics review, combustion, ideal cycles, real engine cycles, fuels and fuel metering, exhaust gas analysis, air pollution. Offered: Every Spring
- **ME 680 - Gas Dynamics (3 units):** Fundamentals of compressible flow; one dimensional flow, shock waves, area change, heat transfer, friction in subsonic and supersonic flow.
- **ME 682 - Aerodynamics (3 units):** Lift and drag characteristics of bodies and aerodynamics characteristics of the complete airplane. Offered: Every Fall
- **ME 689 - Introduction to Microtechnology (3 units):** Microtechnology (or MicroElectroMechanical Systems (MEMS)) is the application of traditional engineering disciplines at the microscale. Includes material set and design of microtechnology fabrication process flows. Offered: Every Fall - Even Years

- **ME 691 - ASME Pressure Vessel Code for Nuclear Transport and Storage (1 unit):** Guidance for ASME Pressure Vessel Code application to nuclear transport and storage. Addresses design, fabrication, examination, and testing of package and cask to meet Code and regulatory requirements. This course offered only at Argonne National Laboratory. Students are responsible for all national laboratory fees and expenses associated with the course location. Offered: Every Spring.
- **ME 692 - Quality Assurance for Transport Packaging and Storage Casks (1 unit):** Development of QA requirements for design, procurement, fabrication, examination, and testing of radioactive material packaging and storage casks to satisfy regulatory requirements. This course offered only at Argonne National Laboratory. Students are responsible for all national laboratory fees and expenses associated with the course location. Offered: Every Spring.
- **ME 694 - Nuclear and Other Radioactive Materials Transport Security (2 units):** International and U.S. domestic requirements for security during the transport of nuclear and other radioactive materials. Use of transport security plans, readiness reviews and corrective actions. This course offered only at Argonne National Laboratory. Students are responsible for all national laboratory fees and expenses associated with the course location. Offered: Every Fall.
- **ME 695 - SARP Review and Confirmatory Analysis (2 units):** Method for implementing and satisfying US regulations in the safety basis of radioactive materials transport packages. This course offered only at Lawrence Livermore National Laboratory. Students are responsible for all national laboratory fees and expenses associated with the course location. Offered: Every Fall
- **ME 696 - Management of SARP Preparation (1 unit):** This course focuses on the development of management activities required to produce Safety Analysis Reports for Packaging (SARP). This course offered only at Savannah River National Laboratory. Students are responsible for all national laboratory fees and expenses associated with the course location. Offered: Every Fall and Spring.
- **ME 697 - Radioactive Material Package Operations and Leak Testing (1 unit):** Course include radioactive material packaging activities with a focus on the safe handling and loading of radioactive material into approved packaging systems and formal instruction on leak testing. This course offered only at Savannah River National Laboratory. Students are responsible for all national laboratory fees and expenses associated with the course location. Offered: Every Fall and Spring
- **ME 701 - Advanced Mathematical Methods for Engineers (3 units):** Regular and singular perturbation theory, multiple-scale analysis; asymptotic expansions with application to mechanical systems. Offered: Every Fall
- **ME 703 - Training in Technical Presentations (1 unit S/U only):** Skills, ethics and practice for technical presentations at meetings, conferences, and seminars. Maximum of 3 credits. Offered: Every Fall and Spring
- **ME 710 - Advanced System Dynamics and Optimal Control (3 units):** State space analysis of deterministic, continuous systems, observability, controllability, Lyapunov functions and stability theorems, the theory of optimal processes and Pontryagin's maximum principle. Offered: Every Fall
- **ME 720 - Continuum Mechanics (3 units):** Rigorous study through tensors; topics include kinematics, stresses, strains, balance laws, constitutive equations and field equations. Offered: Every Spring
- **ME 721 - Viscoelasticity (3 units):** Viscoelastic stress-strain constitutive relations, polymer behavior, elastic-viscoelastic correspondence principle, initial/boundary value problems, wave propagation, thermoviscoelasticity, creep. Offered: Every Spring
- **ME 730 - Energy and Variational Methods (3 units):** Equations of mechanics, energy and variational principles; Galerkin, Ritz and finite-element analysis of plate and shells. Offered: Every Spring
- **ME 740 - Advanced Dynamics (3 units):** Fundamentals of analytical mechanics. Behavior of dynamical systems, geometric theory. Stability of multi-degree of freedom autonomous and nonautonomous systems.
- **ME 741 - Advanced Vibrations (3 units):** Vibration of multi-degree of freedom systems with emphasis on modal analysis. Introduction to vibration of continuous systems, exact and approximate solutions. Offered: Every Fall - Even Years

- **ME 745 - Mechanical Behavior of Materials (3 units):** Understanding stress and strain and mechanisms of flow and fracture. Mechanical property tests including multi-axial state of stress and the basic metal working processes. Offered: Every Fall - Even Years.
- **ME 746 - Advanced Composite Materials (3 units):** Anisotropic elasticity, shear deformation effects; laminated plates and shells; energy methods applied to composite structures; joining and fastening special topics. Offered: Every Spring
- **ME 751 - Computational Structural Analysis (3 units):** Mechanical response of structures subjected to static, dynamic and thermal loads utilizing commercial finite element codes. Offered: Every Fall
- **ME 761 - Convection Heat Transfer (3 units):** Equations of continuity, momentum, energy and mass diffusion. Laminar solutions including the Graetz problem, similarity parameters, external and internal flows. Integral methods. Turbulence. Offered: Every Fall - Even Years
- **ME 762 - Radiation Heat Transfer (3 units):** Radiation properties of surfaces, radiation exchange in enclosure, radiative transfer in absorbing, emitting and scattering media, combined radiation with conduction and convection. Offered: Every Fall - Odd Years
- **ME 763 - Enhanced Heat Transfer (3 units):** Performance evaluation criteria, finned surfaces, integral roughness, insert devices, jets, film cooling, destabilized flows, current research topics. Offered: Every Fall - Odd Years
- **ME 764 - Two-Phase Heat Transfer and Flow (3 units):** Thermodynamics and interfacial phenomena associated with phase change processes, nucleation, bubble and droplet growth, evaporation, condensation, two-phase flow, convective boiling and condensation, melting and solidification. Offered: Every Fall - Even Years
- **ME 768 - Low-Reynolds Number Flows (3 units):** Physical principles and methods for analytical and numerical calculation of flows involving Reynolds numbers much less than one. Offered: Every Fall - Odd Years
- **ME 771 - Advanced Thermodynamics (3 units):** Classical approach to thermodynamic equilibrium, stability of thermodynamic systems, extremum principles, Maxwell relations, phase transitions, chemical thermodynamics, Nernst postulate, and irreversible thermodynamics. Offered: Every Fall
- **ME 782 - Turbulent Flow and Transport (3 units):** Reynolds averaged equations, simple closure techniques for velocity and temperature field prediction in free and bounded flows. Complex closure.
- **ME 791 - Special Topics (1 to 4 units):** Literature search and analytical study of special problems. Maximum of 6 credits. Offered: Every Fall and Spring
- **ME 795 - Comprehensive Examination (1 unit):** Course is used by graduate programs to administer comprehensive examinations either as an end of program comprehensive examination or as a qualifying examination for doctoral candidates prior to being advanced to candidacy.
- **ME 797 - Thesis (1 to 6 units).** Offered: Every Fall and Spring
- **ME 799 - Dissertation (1 to 24 units).** Offered: Every Fall and Spring
- **ME 899 - Graduate Advisement (1 to 4 units):** Provides access to faculty for continued consultation and advisement. No grade is filed and credits may not be applied to any degree requirements. Limited to 8 credits (2 semester) enrollment. For non-thesis master's degree students only.

4. GRADUATE SCHOOL ACADEMIC REQUIREMENTS

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).

5. TRANSFER 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](#)⁸ available on Graduate School website and must be signed by the student, major advisor, and graduate director. 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.

6. TIMELINE FOR DEGREE COMPLETION

Master's degrees: All course work must be completed within six years preceding the awarding of the degree.

Doctoral degrees: All course work must be completed within eight years preceding the awarding of the degree. Credits transferred into doctoral degree from a completed master's degree are exempt from this eight-year limit.

In Mechanical Engineering, most MS students graduate within three years and most PhD students obtain their degrees within three to five years.

The following forms are required to be submitted to the graduate school with deadlines specified. Note: all links are subject to change. Please refer to the [Graduate Website](#)⁹ for up to date information.

- [Declaration of Advisor/Major Advisor/Committee Chair Form](#)¹⁰
 - For master's students, completed form must be submitted to Graduate School by the end of the student's second semester
 - For doctoral students, completed form must be submitted to Graduate School by the end of the student's third semester
- [Program of Study Form](#)¹¹
 - For master's students, completed form must be submitted to Graduate School by the end of the student's third semester
 - For doctoral students, completed form must be submitted to Graduate School by the end of the student's fourth semester
- [Doctoral Degree Admission to Candidacy Form \(Doctoral Students Only\)](#)¹²

⁸ <http://www.unr.edu/Documents/graduate-school/GraduateCreditTransferEvaluationRequest.pdf>

⁹ <https://www.unr.edu/grad/forms-and-deadlines>

¹⁰ <https://www.unr.edu/Documents/graduate-school/Declaration-of-Advisor.pdf>

¹¹ <https://www.unr.edu/Documents/graduate-school/program-of-study.pdf>

¹² <https://www.unr.edu/Documents/graduate-school/17doctoral-degree-admission-to-candidacy-updated.pdf>

- This form is filled out and signed by the Examination Committee after satisfactorily passing the Dissertation Proposal.
- Graduation Application – Found by following the steps on the [MyNEVADA Graduation Help Website](#)¹³. Must be submitted to the graduate school several weeks in advance. Check website for exact dates.
- Notice of completion – completed form should be submitted after all requirements have been met.
 - [Master's Notice of Completion Form](#)¹⁴
 - [Doctoral Notice of Completion Form](#)¹⁵
- [Exit Survey Form](#)¹⁶

7. COMMITTEE SELECTION GUIDELINE

Master's Programs: All masters programs (with the exception of the Master's of Business Administration and the Master's of Accountancy programs) require at least three advisory committee members. All must be graduate faculty members. At least one (the graduate school representative or "outside" member) must be from a department or program different from the department or program from which the student is graduating.

Doctoral Programs: Consist of a minimum of five graduate faculty members; the chair, at least two faculty members from the student's major department/program, at least one faculty member from a department in a field related to the student's major, and at least one Graduate School representative.

In case of interdisciplinary graduate programs, the Graduate School Representative cannot have a primary appointment in the same department (or other appropriate major unit) as the student's committee chair.

Formal approval of all student advisory committees is made by the Graduate Dean.

The role of the Committee: For Plan A MS Degree and PhD degree, the Committee guides the course and research work during a student's graduate study. The Committee examines the student's achievements and determines whether or not a student satisfies the minimum degree requirements. For Plan B MS, the Committee examines the student's course work and qualification through a comprehensive exam.

Formation of the Committee: The Committee should be formed no later than end of third semester for Master's students and end of fourth semester for doctoral students.

8. COMPREHENSIVE AND QUALIFYING EXAMS

Plan B MS students and PhD students are required to take comprehensive exams. The student should register the one-credit ME 795 "Comprehensive Examination" in the semester when the student takes the comprehensive exam. Plan B MS students take the comprehensive exam in the last semester before graduation. The Committee decides the format of the comprehensive exam. Usually the comprehensive exam includes a written report and an oral presentation. The report can be a literature review on a specific research topic or a project determined by the Advisor. The oral presentation can be related to the report and questions about any topic related to coursework in program of study. In the case of unsatisfactory comprehensive exam, the Committee can

¹³ <https://www.unr.edu/mynevadahelp/studentcenter/academicprogress/graduationapplication>

¹⁴ <https://www.unr.edu/Documents/graduate-school/notice-of-completion-master-degree-updated.pdf>

¹⁵ <https://www.unr.edu/Documents/graduate-school/notice-of-completion-doctoral-degree.pdf>

¹⁶ <https://www.unr.edu/grad/forms-and-deadlines/exit-survey>

recommend termination of the student's graduate study or probation with further work in the report and/or improved presentation.

For PhD students, qualifying exam is taken after completion of major coursework usually in the first or second year of PhD studies. For students that have started their PhD program before Spring 2018: A student registers the 1-credit course ME795 "Comprehensive Examination" and takes the FE (Fundamentals of Engineering) exam with a minimum score of 70. The Committee decides whether or not an oral presentation is needed for the qualifying exam. In the case of unsatisfactory comprehensive exam, the Committee can recommend termination of the student's graduate study or retake of the FE exam. The Committee determines how many times a student can retake the comprehensive exam. For students that have started their PhD program in Spring 2018 or later: the new rules of the ME PhD Qualifying exam apply. Please refer to the ME PhD Qualifying Handbook for details.

9. THESIS REQUIREMENTS (AND/OR NON-THESIS OPTION)

The format for the thesis and dissertation should follow the requirement specified by the UNR Graduate School. This can be found at [Dissertation and Thesis Submission Requirements Form](#)¹⁷.

Graduate School forms and resources related to thesis and dissertations:

- [Doctoral Dissertation Filing Guidelines Website](#)¹⁸
- [Masters Thesis Filing Guidelines Website](#)¹⁹
- (Doctoral students only) [Dissertation Title Form](#)²⁰

The format and requirement of the report as part of the Comprehensive Exam for Plan B MS students are specified by the Examination Committee.

Once all requirements have been met, students need to submit a Final Review Approval and Notice of Completion form in order to graduate.

Final Review Approval – Obtain sign-off from advisory committee chair

- Master's - [Thesis Final Review Approval Form](#)²¹
- Doctoral - [Dissertation Final Review Approval Form](#)²²

Notice of completion – completed form should be submitted after all requirements have been met.

- [Master's Notice of Completion Form](#)²³
- [Doctoral Notice of Completion Form](#)²⁴

¹⁷ <https://www.unr.edu/Documents/graduate-school/Dissertation%20%20Thesis%20Submission%20Requirements.pdf>

¹⁸ <https://www.unr.edu/grad/forms-and-deadlines/dissertation-filing-guidelines>

¹⁹ <https://www.unr.edu/grad/forms-and-deadlines/thesis-filing-guidelines>

²⁰ <https://www.unr.edu/grad/forms-and-deadlines/dissertation-title-form>

²¹ <https://www.unr.edu/Documents/graduate-school/thesis-final-review-approval-form.pdf>

²² <https://www.unr.edu/Documents/graduate-school/dissertation-final-review-approval-form.pdf>

²³ <https://www.unr.edu/Documents/graduate-school/notice-of-completion-master-degree-updated.pdf>

²⁴ <https://www.unr.edu/Documents/graduate-school/notice-of-completion-doctoral-degree.pdf>

10. GRADUATE ASSISTANTSHIPS

Teaching assistantship (TA) and research assistantship (RA) are usually available for PhD students and Plan A MS students. Almost all full-time Ph.D. students in Mechanical Engineering are fully supported by either TA or RA. Typical support for graduate assistantships covers tuition and fees, health insurance, and offers financial compensation of \$1,800/month, but it is subject to vary. TA and RA positions are offered by the faculty advisors. Typically, assistantships are not available to Plan B MS students.

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 (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.

The most updated information on graduate assistantship can be found in the graduate school website:

- [General Information Website](#)²⁵
- [Assistantship Handbook](#)²⁶

11. 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 the University sponsored health insurance 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](#)²⁷ 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 \(OISS\) Website](#)²⁸ directly.

[Health Insurance Website](#)²⁹

12. LEAVE OF ABSENCE

Continuous Enrollment: To maintain "good standing" all graduate students are required to enroll in a minimum of three (3) graduate credits each fall and spring semester until they graduate. International students may be required to enroll in nine graduate credits each fall and spring semester depending on the requirements of their visa. All students holding assistantships (whether teaching or research assistantships) are required to enroll in a minimum of six (6) graduate credits each semester they hold the assistantship.

²⁵ <https://www.unr.edu/grad/funding/graduate-assistantships>

²⁶ https://www.unr.edu/Documents/administration-finance/hr/hr-graduate/GA_handbook.pdf

²⁷ <https://studentinsurance.usi.com/UNR/unr-grad>

²⁸ <https://www.unr.edu/oiss>

²⁹ <http://www.unr.edu/grad/health-insurance>

Leave of Absence: Students in good standing may request a leave of absence by completing a [Leave of Absence Form](#)³⁰ available on the Graduate School website during which time they are not required to maintain continuous registration. Usually, a leave of absence is approved for one or two semesters. The leave of absence request may be extended by the student filing an additional leave of absence form. Students applying for a leave of absence should not have any “incomplete” grades which could be changed to “F” and have a detrimental impact on their cumulative GPA. Requests for leave of absences must be received by the Graduate School no later than the last day of enrollment for the semester the leave is to begin.

Reinstatement: When a student has been absent for one semester or more without an approved leave of absence, he or she may request reinstatement via the [Reinstatement Form](#)³¹ available on the Graduate School website. This form allows the program the option to recommend the student be re-admitted to their graduate program based on their previous admission OR require the student to re-apply for admission which would require students to submit a new application for admission and pay the application fee. The Notice of Reinstatement to Graduate Standing must be received by the Graduate School no later than the last day of enrollment for the semester the reinstatement is to begin.

13. GRADUATE STUDENT ASSOCIATION

The Graduate Student Association (GSA) 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 Student Association Website](#)³²

14. GRADUATE SCHOOL FORMS

Please refer to [Graduate Forms Website](#)³³ for all forms available at the Graduate School.

³⁰ https://www.unr.edu/Documents/graduate-school/leaveofabsencer_9.23-1.pdf

³¹ <https://www.unr.edu/Documents/graduate-school/Notice-of-Reinstatement-Graduate-Standing.pdf>

³² <https://www.unr.edu/gsa/>

³³ <https://www.unr.edu/grad/forms-and-deadlines>