

Chemical Engineering Program

Graduate Handbook

2019 – 20

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Program Description

The Chemical Engineering Program is a part of the Chemical and Materials Engineering Department. The program offers graduate degrees at the Masters (MS) and Doctorate (PhD) levels to its students. The degrees recognize the successful culmination of a student learning experience that involves a holistic and well-rounded mentoring in various areas of chemical engineering and allied disciplines. The students are mentored by a core group of five faculty specializing in various areas of chemical engineering and related disciplines.

Students who have graduated from Chemical Engineering have successfully been placed in industry, PhD programs, post-doctoral fellowships, as well as academic programs nationally and internationally. This is indicative of the success of the graduate program in Chemical Engineering.

1.1 Mission of the Program

The mission of the Chemical Engineering Graduate Program is:

- To provide nationally recognized leadership in education, research, and service in Chemical Engineering.
- To graduate MS and PhD students with the academic experience necessary to be useful in industry, academia, research organizations, or as entrepreneurs.
- To generate new knowledge, publish papers in scientific and engineering journals, as well as produce intellectual property of relevance.

1.2 Educational Objectives

- To enable students to apply advanced science and engineering principles to areas of relevance to chemical engineering and chemical sciences.
- To develop hands-on analytical skills in our students to solve problems of disciplinary and interdisciplinary nature using creative approaches and professionalism.
- To provide students with the skills to communicate well in a professional environment, articulate and exchange ideas, and develop team skills.
- To teach students the importance of ethical engineering practice with an emphasis on understanding the legal, moral, and environmental consequences of engineering problem solving.
- To prepare students with required skill set to enter a broad range of career paths.

1.3 Graduate Degrees Offered

Graduate programs offered are:

- MS in Chemical Engineering
 - Thesis option (Plan A)
 - Non- thesis option (Plan B)
- Accelerated BS/MS Program (GPA \geq 3.0 in senior year)
- PhD in Chemical Engineering

A summary of these graduate programs is presented below

- **Master of Science in Chemical Engineering (MS in ChE):** An advanced degree that offers a student the option to earn 30 credits or more, typically over a period of up to 5 semesters,^{*1} with a Thesis (also called Plan A). A non-Thesis option with 32 credits or more (also called Plan B) is also offered. Course/research experience is in fields directly or indirectly related to Chemical Engineering. Plan A students are under the primary mentorship of a Chemical Engineering faculty member (Advisor) toward the Thesis. Due to the absence of a thesis, the students seeking an MS degree through plan B discuss the course of action in consultation with their advisor while Plan B students are supervised by an advisor in the program.

- **Accelerated BS/MS program:** This specialized program is open to students with a GPA of 3.0 or higher in the senior level of their Bachelors program. Such students may consider earning an MS degree by taking courses at the 400/600 level in their senior year that count towards a graduate degree, allowing students to earn both BS and MS degrees in five years from the start of the BS program. Thesis and non-Thesis options are available.
- **Doctor of Philosophy in Chemical Engineering (PhD in ChE):** An advanced degree that offers a student the option to earn 72 credits or more, typically over a period ranging from 6 to 10 semesters. ^{*1} The program includes course and research activities in Chemical Engineering and/or related disciplines. The research is performed under the primary mentorship of a Chemical Engineering faculty (Advisor) member toward a Dissertation.

^{*1} The timeline for graduation from the University may vary depending on the incoming status of the graduate student.

1.4 Graduate Director and Role

The Chemical Engineering Graduate Director oversees all aspects of graduate education within the program. 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.
- Ensuring the graduate student is on track toward completion of the graduate study.
- Graduate student recruitment and promotion of the graduate program.
- Mediating in conflicts between graduate students and their Advisor.
- Distributing opportunities for fellowships to graduate students.
- Functioning as a liaison between graduate school and program faculty.

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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.

1.5 Graduate Faculty and Role

There are four graduate faculty in the program besides the graduate director, currently. The graduate faculty activities include:

- Advise their students with developing a Program of Study.
- Assist their students with establishing a committee.
- Mentor their students on their research topics.
- Assist their students with manuscript, poster, and seminar preparation.
- Encourage their students to participate in conferences.

- Ensure timely graduation and offer guidance with future career planning.

Admissions and Initial Post-Admission Information

2.1 Admission Procedure

This handbook provides a combination of pre-admission preparation recommendations as well as post-admission activities expected of a newly admitted graduate student.

Recommended Pre-Admission Pathway

Documents	Requirement	Details	Sent to
GRE*	All applicants	300 MS, 305 PhD	Graduate School
TOEFL*	International applicant	Minimum 550	Graduate School
Reference Letters	2 minimum		Graduate School
Transcript	Official Document(s), GPA with Pass Grade required	Required at the time of admission	Graduate School
Fee	Required	\$60 domestic, \$95 International	Graduate School

* Official results should be communicated by the testing services directly to the institution.

2.2 Application Dates

The Graduate School will accept applications on a rolling a basis. However, the recommended dates are set to optimize processing of applications:

- **March 15 for Fall Admissions** (classes typically begin late August)
- **October 1 for Spring admissions** (classes typically begin mid January)

Applying early is encouraged. Please provide adequate time to seek necessary visa from the US consulate if you are an international applicant.

Details of the Graduate Programs

The Chemical Engineering Program offers different options for graduate students. The Program of Study for students is flexible and can be custom designed with student goals and future career objectives in mind. The program and its faculty strive to offer a graduate experience that will lead to a degree that maintains a high standard in research and education.

MS Degree in Chemical Engineering – Plan A (Thesis Option)

The MS degree program is usually expected to spread over 3 to 4 semesters. The program is not designed to provide extensive research experience because the credit requirements are such that most of the time is utilized in courses. However, some research work leading to publication is still possible and expected.

Credit requirements

- Total credits required: 30
 - 21 course credits
 - Must include 9 credits from CHE Core, see Section 3.5
 - seminar credits (CHE 790)
 - 6 thesis credits (CHE 797)
 - Minimum of 18 total credits must be at 700 level

Required documentation at various stages of the program

The following is the recommended timeline, and required paperwork, for MS Plan A:

Procedural Step	Completion Timeline	Required Paperwork
Select* and meet with Advisor	By end of 1 st semester	Declaration of Advisor/Major Advisor/Committee Chair
Establish Advisory Committee	By end of 1 st year	Program of Study
Complete Program of Study form	By end of 1 st year	Program of Study
Complete course and research requirements	During final semester	
Apply for graduation	During final semester	Graduation Application
Defend thesis	During final semester	Notice of Completion

** You can elect to work with a faculty member that you choose to as early as from the time of your admission application.*

Defending the MS thesis

The thesis represents a culmination of the research completed during the master studies, and is written as a formal document, consistent with graduate school guidelines. The format of the thesis is agreed upon by the student and the major advisor. Following is a list of activities comprising the defense:

- Schedule a defense date and reserve a room/location. The date of defense must be at least one week (preferably more) prior to the graduate school's deadline for thesis submission.
- Submit the completed thesis to all committee members at least two weeks prior to the defense date.
- Publicly announce the defense by email and by handbill at least two weeks prior to the defense.
- The committee will provide feedback on the content of the thesis prior to or during the defense.
- The candidate will provide a 30 to 45 minute public seminar as an oral defense of the thesis. Subsequently, the public audience may ask questions, after which the public will be excused. Finally, the advisory committee discusses the content of the thesis, the oral defense, and other topics within chemical engineering to determine the candidate's suitability for recognition with a MS degree in Chemical Engineering. When the committee is satisfied with the candidate's answers, they will vote to approve the oral defense.
- In most cases, the committee will provide written comments requesting certain corrections or improvements in the thesis before it is approved and submitted to the graduate school.

MS Degree in Chemical Engineering – Plan B (non-Thesis Option)

Credit requirements

- Total credits required: 32
 - 21 course credits
 - Must include 9 credits from CHE Core, see Section 3.5
 - Must include 1 credit of CHE 795 – Comprehensive Exam
 - seminar credits (CHE 790)
 - 6 thesis credits (CHE 797)
 - Minimum of 15 total credits must be at 700 level

Required documentation at various stages of the program

The following is the recommended timeline, and required paperwork, for MS Plan B:

Procedural Step	Completion Timeline	Required Paperwork
Select* and meet with advisor	By end of 1 st semester	Declaration of Advisor/Major Advisor/Committee Chair
Establish advisory committee	By end of 1 st year	
Complete program of study form	By end of 1 st year	Program of Study
Complete course requirements	During final semester	
Apply for graduation	During final semester	Graduation Application
Complete oral Comprehensive Exam	During final semester	Enrollment in CHE 795; Notice of Completion

* You can elect to work with an admission at the time of application as well.

It should be noted that there is no requirement to submit a thesis.

PhD Degree in Chemical Engineering**Credit requirements**

- Total credits required: 72
 - 42 course credits
 - Must include 9 credits from CHE Core, see Section 3.5
 - Must include 1 credit of CHE 795 – Comprehensive Exam
 - At least 15 course credits must be at 700 level
 - 6 seminar credits (CHE 790)
 - 24 thesis credits (CHE 797)

Required documentation at various stages of the program

The following is the recommended timeline, and required paperwork, for the PhD:

Procedural Step	Completion Timeline	Required Paperwork
Select* and meet Advisor	By end of 1 st semester	Declaration of Advisor/Major Advisor/Committee Chair
Complete PhD Qualifying Exam	By end of 1 st semester	
Establish Advisory Committee	By end of 1 st year	Program of Study
Complete Program of Study form	By end of 1 st year	Program of Study
Complete Comprehensive Exam	After completion of 30 credits;* Minimum of 6 months to 1 year prior to dissertation defense date	Enrollment in CHE 795; Doctoral Degree Admission to Candidacy/Comprehensive Examination Report
Complete course and research requirements	During final semester	
Apply for Graduation	During final semester	Graduation Application
Defend Dissertation	During final semester	Notice of Completion

* You can elect to work with a faculty member that you choose to as early as from the time of your admission application.

PhD Qualifying Exam information

The goal of the PhD Qualifying Exam is to assess the student's proficiency in chemical engineering and determine the proper preparation to succeed in graduate-level chemical engineering courses.

Content: Core program areas of chemical engineering (including but not limited to Thermodynamics, Reactor Design, and Transport Phenomena) will be assessed at the undergraduate level with questions provided by appropriate program faculty.

Format: The written exam will be open book/notes and students will have 1 day (8 hours) to complete it.

Outcome: Students will be evaluated as Proficient/Not Proficient in each topic area. In the event that a weakness in an area is identified, the student may be advised to complete remedial course work determined at the discretion of the primary Advisor and/or the examination committee.

PhD Comprehensive Exam information

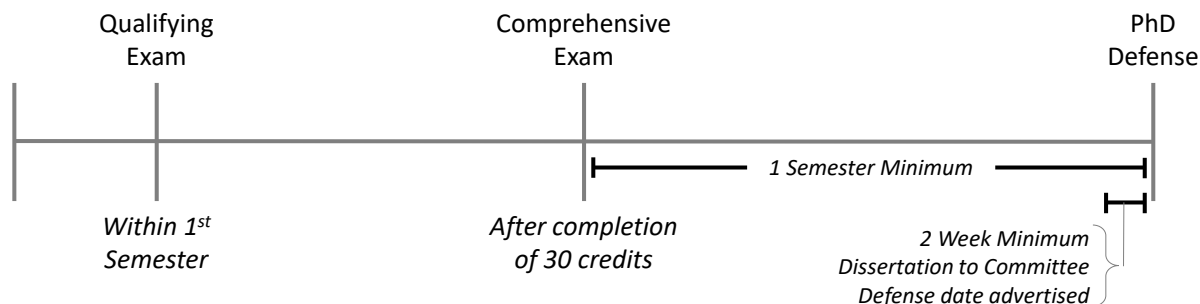
The goal of the PhD Comprehensive Exam is to evaluate that the student is able to complete independent research. After successfully completing the PhD Comprehensive Exam, the student will be recognized as a PhD Candidate.

Content: The exam will consist of two parts*: (1) a written portion, which may take a variety of forms, and (2) an oral portion.

- *Written Portion:* The PhD Committee Chair (Advisor) in collaboration with the Advisory Committee selects one of the following options:
 - a) **Dissertation Proposal** – The proposal provides the committee with a comprehensive presentation of the dissertation objectives, background, and justification, the work completed to date, and a plan for future work. It is critical that the proposal contain substantial original work completed by the student.
 - b) **Research Proposal** – An original research proposal developed and written by the student that has been prepared for a funding agency.
 - c) **Research Paper** - An original research paper developed and written by the student for a journal or conference where the paper will be reviewed. The paper may be part of the student's PhD dissertation.
- *Oral Portion:*
 - a) Presentation of Written Portion (May be open to the public)
 - b) Questions on Written Portion and area of general study (Committee members only)
- *Evaluation of Pass/Fail:*
 - a) If the evaluation is a Fail the student should consult with his primary advisor and retake the exam (a minimum of 1 week should be present between the date of the first exam and the next).
 - b) The student can retake the exam (i.e. 2 attempts after the first take). Any subsequent retake should be discussed first between the student, primary advisor, and the committee (the graduate director may be included as well).

** Students that wish to receive an MS degree en route to their PhD, or MS students that wish to change into the PhD program, can elect to use their successful MS Thesis Defense (Thesis document as the Written Portion, and oral defense as the Oral Portion) to fulfill the Comprehensive Exam requirements. A student switching to a PhD program after, or during, earning an MS has to follow all the guidelines for the PhD program.*

PhD Progression Timeline



Defending the PhD dissertation

The dissertation represents a culmination of the research completed during the doctoral studies, and is written as a formal document, consistent with graduate school guidelines. The format of the dissertation is agreed upon by the student and the major Advisor, with oversight from the Advisory Committee who serves in an advisory role. Following is a list of activities comprising the defense that every PhD student is recommended to follow:

- Schedule a defense date and reserve a room/location. The date of defense must be more than one week (or more) prior to the graduate school's deadline for dissertation submission.
- Submit the completed dissertation to all committee members at least two weeks prior to the defense date.
- Publicly announce the defense by email and, if possible, by handbill at least two weeks prior to the defense.
- The committee will provide feedback on the content of the dissertation prior to or during the defense.
- The candidate will provide a 45-minute public seminar as defense of the dissertation. Subsequently, the public audience may ask questions, after which the public will be excused. Finally, the advisory committee discusses the content of the dissertation, the oral defense, and other topics within chemical engineering to determine the candidate's suitability for recognition with a PhD degree in Chemical Engineering. Providing that the committee is satisfied with the candidate's answers, they will vote to approve the oral defense.
- In many cases, the committee can provide written comments requesting certain corrections or improvements in the dissertation before it is approved and submitted to the graduate school. The PhD advisor in consultation with the committee determine if all of the comments need to be addressed.

Important Notes

The information provided in this document should be considered as additional requirements to those of The Graduate School at the University of Nevada, Reno. Additional information and all required forms can be found at [The Graduate School Website](https://www.unr.edu/grad)¹.

Students entering the PhD program with a MS degree from another institution have additional deadlines and forms regarding the transfer of credits. Please see The Graduate School's website for additional information. It is important to work closely with your Advisor and the Chemical Engineering Graduate Program Director to ensure that all applicable credits are transferred properly and accounted for towards your PhD progression.

¹ <https://www.unr.edu/grad>

Students and their primary advisors are expected to work together to ensure that all forms are completed and deadlines are met to ensure a timely progression through the MS or PhD program.

Required and Optional Courses for Credit

Students seeking the MS/PhD degree in Chemical Engineering will be required to meet five criteria: A, B, C, D, E*

Criteria A: Any one course each from Core Group I, II, and III. Students can pick one course each from Cores I, II, and III, however it is preferred that the CHE listed courses are taken when offered.

Table of Eligible courses for CHE Core credits.

Core I – Thermodynamics	Core II – Reactor Design	Core III – Transport Phenomena
CHE 760 – Advanced Chemical Engineering Thermodynamics	CHE 741 – Advanced Kinetics and Reactor Design	CHE 764 - Advanced Transport Phenomena
CHE 762 – Statistical Thermodynamics	CHEM 752 – Chemical Kinetics	ME 764 – Two-Phase Heat Transfer and Flow
CHEM 755 – Statistical Thermodynamics	CEE 756R – Environmental Chemical Kinetics	

Criteria B: Minimum of 11 courses for PhD, 5 for MS Plan A, or 7 for MS Plan B; these can be at the 600- and 700-level as per the recommendations of the graduate advisory committee provided the minimum number of 700-level credits are met. The list of possible courses provided in the Appendix is not comprehensive and includes courses that are offered on an irregular basis.

Criteria C: CHE 797 (MS Plan A) or CHE 799 (PhD) – Research activities with primary faculty in Chemical Engineering on a project approved by the faculty and/or the graduate committee. *Total credits: 24 for PhD, 6 for MS Plan A, 0 for MS Plan B*.*

*Note that students in the MS Plan B track will take additional course credits in lieu of the CHE 797 credits.

Criteria D: CHE 790 Seminar – A minimum of 6 credits for PhD, 3 credits for MS Plan A, and 2 credits for MS Plan B must be completed.

Criteria E (*MS Plan B and PhD only): CHE 795 Comprehensive Exam

Other Details

4.1 Committee selection guideline

4.1.1 MS thesis advisory committee

The committee should consist of at least 3 members, all who must be members of the Graduate Faculty. The members include: primary thesis advisor (chair of the committee), a graduate faculty from the program, and a graduate faculty external to the CHE program to serve as the Graduate School Representative. 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 in the broad area of Chemical Engineering pertinent to the student's research topic.

Formal approval of the student's Advisory/Examining Committee is made by the Graduate Dean. The Advisory/Examining Committee approves the student's Program of Study 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 (for details see the tables and timeline above).

4.1.2 PhD advisory/examining committee

The committee must be formed no later than end of the 4th semester. The Advisory/Examining Committee of a doctoral student should consist of at least five members, who must all be members of the Graduate Faculty. One of the members must be the student's Advisor, serving as Committee Chair, two or more members must be from the Chemical and Materials Engineering Department, one or more from departments in related fields, and one from outside the Department serving as the Graduate School Representative. 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 in the broad area of Chemical Engineering pertinent to the student's research topic. Formal approval of the student's Advisory/Examining Committee is made by the Graduate Dean.

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.

For students going directly from the BS degree to the PhD degree, the Advisory/Examining Committee should be formed prior to the completion of 24 credits in graduate courses. Students entering the PhD program with a MS degree should form the Advisory/Examining Committee during their first semester of enrollment.

The Advisory/Examining Committee approves the student's Program of Study 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 dissertation (for details see the tables and timeline above).

4.2 Graduate Seminar

Graduate students pursuing a PhD or MS Thesis option (Plan A) must complete CHE-790 credits. These requirements are: 3 for MS A, 6 for PhD. The students are required to attend public talks at the Chemical and Materials Engineering Seminar as part of the CHE 790 course. Additional seminars outside of the department may also be beneficial and should be attended based on the recommendation of the primary graduate advisor.

Please follow specific colloquia or seminar announcements for exact time and place of the course. Students are able to receive these announcements from the departmental mailing lists and should ensure that their email address is registered for these mailing lists.

4.3 Recommendation for Specialization Areas

Graduate students must be willing and capable of taking one or more courses from areas of their specialization. The choice of course will be made in consultation with the primary graduate advisor with oversight from the committee. These are part of course requirements discussed above.

4.4 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](#)² available on Graduate School website and must be signed by the student and major advisor. If the graduate school notices any discrepancy, they can request an oversight from the graduate director. Only courses with a grade of "C" or better may be transferred to a MS program; only courses with a grade of "B" or better may be transferred to a PhD program. Credits from a completed MS degree will be exempt from the 8-year time limitation for those students earning a PhD degree. The graduate school guidelines or graduate admission office must be consulted prior to approving such a transfer.

For PhD programs a maximum of twenty-four (24) credits from a previously completed MS program or other post BS degree program may be applied. PhD students who have completed a MS degree in an appropriate discipline from an accredited institution may, with the approval of their primary advisor/advising committee, receive up to twenty-four (24) credits with B or higher toward a PhD 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 MS degree, except thesis credits, may be acceptable for transfer.

4.5 Additional Details on Timeline for Degree Completion

If there is a likely delay in the graduation of the student it must be discussed with the students' committee and the graduate school, and if needed with the advice of the graduate director. A memo signed by the student and his/her graduate advisor indicating the outcome of the discussion should be recorded in the graduate admissions office, and if appropriate the Leave of Absence documentation completed (see below).

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.

4.6 Program of Study

The [Program of Study form](#)³ is a very important document that describes the roadmap for a students' graduate experience in the program. This includes specific plan of technical courses, seminars, and research credits, and related activities. The graduate student's Advisor 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

² <http://www.unr.edu/Documents/graduate-school/GraduateCreditTransferEvaluationRequest.pdf>

³ <http://www.unr.edu/Documents/graduate-school/program-of-study.pdf>

Director of the program approves the Program of Study once all the members of the Thesis Committee approve. 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, also indicates the members of the Advisory/Examining Committee. Non-Thesis MS students have to list the Graduate Director as their advisor on their Program of Study until such point the student chooses a primary advisor. At that point the student should file a declaration form indicating the primary advisor. For master's students, the completed form must be submitted to Graduate School by the end of the student's third semester. For doctoral students, the completed form must be submitted to Graduate School by the end of the student's fourth semester.

Changes to the Program of Study can be made using the Change in Program of Study form or Change of Advisory Committee form. It should have the approval of at least one faculty member from the student's thesis committee. The form should be submitted to the Graduate Dean for approval. 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.

4.7 Commencement

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

- Filed an application for graduation for the appropriate semester (fall or spring); and
- 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.

4.8 Graduate Assistantships

Graduate Assistantships are often available and offered through the Chemical and Materials Engineering Department. Teaching Assistantship (TA) positions come from the department. Research Assistantships (RA) come from individual faculty members, and depend on availability of funds, student performance, and type of program (MS or PhD) being pursued by the student. The decision to offer a TA is typically made by the department chair in consultation with the department faculty. Students interested in these positions must contact their advisor to express interest. RAs are offered by faculty members with funded research grants and are dependent on his/her discretion. The department chair or graduate director do not advise on allocation of RAs.

Students are highly encouraged to talk with the faculty prior signing up for MS/PhD program on TA and RA options.

Students are also highly encouraged to sign up to graduate mail lists to receive possible RA/TA offers from other departments/graduate school.

Further, 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.

4.9 Support Services for Teaching Assistants

The role of graduate teaching assistants can vary, and may include performing a variety of duties such as teaching undergraduate or graduate classes, grading assignments, assisting with laboratory experiments, or a combination of these activities. There are opportunities offered where teaching assistants may receive special teaching skills training through the Excellence in Teaching Program ([TEA Website](#)⁴). All graduate students holding an Assistantship (TA or RA) 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 (TA/RA) may be held for a maximum of three (3) years for MS students and five (5) years for PhD students.

Other Resources

Please refer to the most updated information on graduate assistantship at the graduate school website: [Assistantships Website](#)⁵
[Graduate Assistantship Handbook](#)⁶

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. Graduate Assistants work on average 20 hours per week for a 0.5 FTE employee.

5.1 Rights

Graduate students have the right to fair and equitable treatment as employees (**UNR General Catalog - Affirmative Action/Equal Opportunity 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.

5.2 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. They are also expected to take the necessary training (for example: Health and Safety related) prior to

⁴ <https://www.unr.edu/nnic/programs/tea>

⁵ <http://www.unr.edu/grad/funding/graduate-assistantships>

⁶ http://www.unr.edu/Documents/administration-finance/hr/hr-graduate/GA_handbook.pdf

participating in any laboratory activities. Custom training may be requested if the student is required to handle hazardous materials.

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 opt out of the student health insurance, it is the student's responsibility to complete the [University online waiver form](#)⁷ 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](#)⁸ directly.

See also: [Health Insurance Website](#)⁹

Academic and Other Policies

7.1 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 MS degrees).

7.2 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 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 MS degree program and 8 years for a PhD degree program). International students may be required to 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.

⁷ <https://studentinsurance.usi.com/UNR/unr-grad>

⁸ <https://www.unr.edu/oiss>

⁹ <https://www.unr.edu/grad/health-insurance>

7.3 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.

7.4 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](#)¹⁰ 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 MS degree and eight calendar years for the PhD degree. That is, the clock does not stop.

7.5 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](#)¹¹ with their graduate program. Once completed, the program will return this form to the Graduate School for final approval. 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 him or her to submit a new application for admission and pay the application fee.

7.6 Good 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.

7.7 Publication Requirement

All graduate students are expected that by the time of their thesis or dissertation defense they have published in peer-reviewed journals. There is no specific number required or type of publication required. Further, it is recommended that all PhD students are involved in writing grant applications under supervision by their faculty advisors, if possible.

7.8 Earning an MS en route to a PhD

If a student who is currently enrolled in the PhD program wants to earn an MS en route, the student must complete an MS Program of Study. The primary advisor will then send a memo to the Graduate School informing them of this request. The student and the student’s advisor should sign the document. For both options (Thesis or non-Thesis), students will only be able to use 24 credits towards the PhD if they take the Thesis option; the six thesis credits (CHE 797) cannot be used towards dissertation credit (CHE 799) requirements.

¹⁰ https://www.unr.edu/Documents/graduate-school/leaveofabsencer_9.23-1.pdf

¹¹ <https://www.unr.edu/Documents/graduate-school/Notice-of-Reinstatement-Graduate-Standing.pdf>

7.9 Completing Two Degrees Simultaneously

Students may choose to complete two MS degrees at the same time, or complete a MS degree while working on a PhD degree in a different discipline. Students may *not* complete two PhD programs simultaneously. When completing two MS 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.

7.10 Changing Advisors

It can happen that a graduate student's research interests change over time, or that the relationship with their current advisor has changed such that a change of advisor is necessary. Any student is free to change advisors, but changing earlier in the degree program is generally easier than later. Advisor changes should be done with consideration and respect for the person who initially advised or recruited the student to come to UNR.

The following are general guidelines for changing advisors:

- Carefully consider the pros and cons of changing advisors as this may involve:
 - Student may lose their Research Assistantship.
 - Teaching assistantships are not guaranteed for students changing advisors.
 - Changing advisors will require a new research topic, as continuing the existing research with a new advisor is only acceptable with permission of the original advisor.
 - Student may receive an "Unsatisfactory" on Thesis or Dissertation credits they are enrolled in, or a failing grade on an independent study with their current advisor if the student does not complete the expectation for the course(s) for the semester.
 - If a PhD student has enough credits, they may need to graduate with an MS degree on their current research topic before starting a new research topic with a new advisor.
- Student should try to work through any differences with their current advisor. The student should express to their advisor why they are considering a change, discuss whether the advisor's expectations are realistic, and whether they are open to adjusting.
- Talk to the Graduate Director (if you feel comfortable). The Graduate Director represents the interests of the graduate students and s/he can help make a better decision on whether switching advisors would be the best solution and help the student better understand the pros and cons of changing. The Graduate Director can also try to mediate between the student and their advisor. This advice is especially important if the student is attempting to change advisors toward the final phase of their graduate program.
- Decide whether working with two advisors would be a viable option.
- Decide whether to change advisors (do not approach other faculty before deciding).

7.11 Student Conduct

To maintain an academic climate conducive to 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.

Graduate Student Association

The Graduate Student Association ([GSA Website](https://www.unr.edu/gsa)¹²) 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.

Forms and Links

- [Declaration of Advisor/Major Advisor/Committee Chair form](#)¹³
 - For master's students, the completed form must be submitted to Graduate School by the end of the student's second semester
 - For doctoral and MFA students, the completed form must be submitted to Graduate School by the end of the student's third semester
- [Program of Study form](#)¹⁴
 - For master's students, the completed form must be submitted to Graduate School by the end of the student's third semester
 - For doctoral students, the completed form must be submitted to Graduate School by the end of the student's fourth semester
- (Doctoral Programs only) [Doctoral degree admission to candidacy form](#)¹⁵
 - For doctoral students who completed all requirements except for the dissertation
- [Graduation Application deadlines](#)¹⁶
 - 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 form](#)¹⁷
 - [Doctoral form](#)¹⁸
- [Exit Survey](#)¹⁹
-

Graduate School forms and resources related to thesis and dissertations:

- [Master's Thesis Filing Guidelines](#)²⁰
- [Doctoral Dissertation Filing Guidelines](#)²¹
- (Doctoral students only) [Dissertation Title Form](#)²²

¹² <https://www.unr.edu/gsa>

¹³ <https://www.unr.edu/Documents/graduate-school/Declaration-of-Advisor.pdf>

¹⁴ <http://www.unr.edu/Documents/graduate-school/program-of-study.pdf>

¹⁵ <https://www.unr.edu/Documents/graduate-school/17doctoral-degree-admission-to-candidacy-updated.pdf>

¹⁶ <https://www.unr.edu/grad/graduation-and-deadlines>

¹⁷ <https://www.unr.edu/Documents/graduate-school/notice-of-completion-master-degree-updated.pdf>

¹⁸ <https://www.unr.edu/Documents/graduate-school/notice-of-completion-doctoral-degree.pdf>

¹⁹ <https://www.unr.edu/grad/forms-and-deadlines/exit-survey>

²⁰ <http://www.unr.edu/grad/forms/thesis-filing-guidelines>

²¹ <http://www.unr.edu/grad/forms/dissertation-filing-guidelines>

²² <http://www.unr.edu/grad/graduation-and-deadlines/dissertation-title-form>

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 Final Review Approval](#)²³
 - [Doctoral Final Review Approval](#)²⁴

You can find an updated list of forms and requirements are found at: [Forms Website](#)²⁵

Appendix

Non-comprehensive list of approved courses at the 600 and 700 level. Note that this list is currently evolving, and that course number and offerings may change.

[APST 663 - Design and Analysis of Experiments](#)

[APST 670 - Linear Regression and Time Series](#)

[APST 705 - Linear and Nonlinear Regression Models](#)

[APST 755 - Multivariate Statistical Methods](#)

[ATMS 612 - Introduction to Air Pollution](#)

[ATMS 706 - Applied Data Analysis](#)

[ATMS 745 - Atmospheric Turbulence](#)

[ATMS 746 - Atmospheric Modeling](#)

[ATMS 747 - Atmospheric Chemistry](#)

[ATMS 749 - Radiation Transfer](#)

[BCH 709 - Introduction to Bioinformatics](#)

[CEE 604 - Open Channel Flow](#)

[CEE 618 - Principles of Water Quality Modeling](#)

[CEE 656 - Design of Water Treatment Systems](#)

[CEE 657 - Design of Wastewater Treatment and Reuse Systems](#)

[CEE 658 - Environmental Chemistry Concepts and Design](#)

[CEE 659 - Hazardous and Solid Waste Management and Control](#)

[CEE 704 - Applied Finite Element Analysis](#)

[CEE 751 - Biological Unit Operations](#)

[CEE 752 - Physiochemical Unit Processes](#)

[CEE 756 - Environmental Chemical Kinetics](#)

[CEE 762 - Mathematical Applications in Transportation](#)

[CHE 616 - Molecular Simulation](#)

[CHE 640 - Chemical Reactor Design](#)

[CHE 651 - Process Control](#)

²³ <http://www.unr.edu/Documents/graduate-school/thesis-final-review-approval-form.pdf>

²⁴ <http://www.unr.edu/Documents/graduate-school/dissertation-final-review-approval-form.pdf>

²⁵ <https://www.unr.edu/grad/forms-and-deadlines>

[CHE 655 - Electrochemical Engineering](#)
[CHE 671 - Process Engineering for Pollution Prevention and Waste Minimization](#)
[CHE 673 - Chemical Process Safety](#)
[CHE 674 - Air Pollution Control Engineering](#)
[CHE 675 - Principles of Bioengineering](#)
[CHE 695 - Special Problems](#)
[CHE 700 - Applied Mathematics in Chemical Engineering](#)
[CHE 704 - Powder Technology](#)
[CHE 705 - Fluidization Engineering](#)
[CHE 706 - Polymer Science and Engineering](#)
[CHE 731 - Advanced Process Control](#)
[CHE 741 - Advanced Kinetics and Reactor Design](#)
[CHE 760 - Advanced Chemical Engineering Thermodynamics](#)
[CHE 761 - Fluid Phase Equilibria](#)
[CHE 762 - Statistical Thermodynamics](#)
[CHE 764 - Advanced Transport Phenomena I](#)
[CHE 765 - Advanced Transport Phenomena II](#)
[CHE 786 - Heterogeneous Catalysis](#)
[CHEM 631 - Advanced Inorganic Chemistry](#)
[CHEM 635 - Chemical Synthesis](#)
[CHEM 637 - Separation Chemistry and Metallurgy of the Rare Earths](#)
[CHEM 639 - Green Chemistry and Sustainability](#)
[CHEM 642 - Advanced Organic Chemistry](#)
[CHEM 649 - Polymer Chemistry](#)
[CHEM 650 - Advanced Physical Chemistry](#)
[CHEM 655 - Instrumental Analysis](#)
[CHEM 655 - Instrumental Analysis](#)
[CHEM 707 - Research Instruments Practicum](#)
[CHEM 742 - Theoretical Organic Chemistry](#)
[CHEM 752 - Chemical Kinetics](#)
[CHEM 755 - Statistical Thermodynamics](#)
[CHEM 757 - Quantum Chemistry](#)
[CS 666 - Numerical Methods I](#)
[CS 667 - Numerical Methods II](#)
[ENGR 630 - Wind Energy](#)
[ENGR 650 - Solar and Renewable Energy Utilization](#)
[ENGR 660 - Fundamentals of Biofuels](#)
[ENGR 701 - Fundamentals of Research](#)
[GE 684 - Groundwater Hydrology](#)
[GE 685 - Waste Containment](#)
[GRAD 701S - Preparing Future Faculty: College Teaching I](#)
[MATH 620 - Mathematical Modeling](#)
[MATH 666 - Numerical Methods I](#)

[MATH 667 - Numerical Methods II](#)
[MATH 701 - Numerical Analysis and Approximation](#)
[MATH 702 - Numerical Analysis and Approximation](#)
[MATH 761 - Methods in Applied Math I](#)
[MATH 762 - Methods in Applied Math II](#)
[ME 620 - Heat Transfer in Renewable Energy Systems](#)
[ME 667 - Intermediate Fluid Mechanics](#)
[ME 674 - Active Solar Engineering](#)
[ME 676 - Internal Combustion Engines](#)
[ME 701 - Advanced Mathematical Methods for Engineers](#)
[ME 730 - Energy and Variational Methods](#)
[ME 746 - Advanced Composite Materials](#)
[ME 761 - Convection Heat Transfer](#)
[ME 762 - Radiation Heat Transfer](#)
[ME 763 - Enhanced Heat Transfer](#)
[ME 764 - Two-Phase Heat Transfer and Flow](#)
[ME 771 - Advanced Thermodynamics](#)
[ME 782 - Turbulent Flow and Transport](#)
[MET 705 - Environmental Chemistry of Metals](#)
[MINE 656 - Mining and Sustainable Development](#)
[MSE 601 - Corrosion of Metals](#)
[MSE 657 - Introduction to Biomaterials](#)
[MSE 665 - Nuclear Power Fundamentals](#)
[MSE 760 - Advanced Metallurgical Thermodynamics](#)
[MSE 761 - Advanced Metallurgical Thermodynamics](#)
[MSE 762 - Statistical Thermodynamics](#)
[NRES 600 - International Issues for Water Development](#)
[NRES 632 - Advanced Environmental Toxicology](#)
[NRES 765 - Biogeochemical Cycles](#)
[PHYS 625 - Therm & Stat Physics](#)
[PHYS 701 - Mathematical Physics](#)
[PHYS 702 - Classical Mechanics](#)
[PHYS 704 - Computational Techniques in Physical Science](#)
[PHYS 707 - Solid State Physics](#)
[PHYS 708 - Nuclear Physics](#)
[PHYS 732 - Statistical Mechanics](#)
[PHYS 740 - Fluid Dynamics](#)
[PHYS 761 - Atomic and Molecular Physics](#)
[PHYS 771U - Advanced Topics Air Pollution](#)
[SCI 625 - Ethics in Science](#)
[STAT 652 - Introduction to Regression and Linear Models](#)
[STAT 653 - Categorical Data Analysis](#)
[STAT 755 - Multivariate Data Analysis](#)

[STAT 757 - Applied Regression Analysis](#)

[STAT 758 - Time Series Analysis](#)

Declaration

The undersigned graduate student has been provided this handbook and confirms that s/he has read and understood the rules indicated in this handbook. The student has agreed to abide by the rules indicated in this handbook so long as they remain bonafied members of the Chemical Engineering Program at the University of Nevada, Reno.

Date _____

Student Name _____

Signature _____

Date _____

Verified by _____
Primary Advisor (tentative)

Signature _____

Date _____

Approved by _____ Signature _____