

Graduate Handbook

School of Nuclear Science and Engineering



Oregon State
University

Nuclear Science & Engineering

Academic Year 26-27

Welcome!

Welcome to Oregon State University (OSU) and the [School of Nuclear Science and Engineering](#) (NSE). This handbook is intended to serve as a resource for new graduate students in the School. Please make sure to read it over and familiarize yourself with the School, University resources, academic policies, and degree requirements. If, after reading the handbook, you still have unanswered questions, please feel free to ask for help. The staff, faculty, and fellow graduate students in NSE are available and willing to answer any questions. This document is not intended to be comprehensive. Additional information on deadlines, procedures and requirements is provided in current [policies](#) outlined by OSU's [Office of Graduate Education](#).

Graduate students in NSE are responsible for complying with the rules of the University, the Office of Graduate Education, and NSE. In some instances, the requirements of NSE are more restrictive than those of the Office of Graduate Education. In such cases, the School requirements specified in this document will apply.

The program requirements that an NSE student must satisfy for a graduate degree are those contained in the version of the handbook and/or Catalog that is current at the time of your matriculation into the program. You and your graduate advisor should consult the correct version of the handbook for appropriate guidelines.

The faculty and staff in NSE hope that your time at OSU will be rewarding, memorable, and become the beginning of a fruitful career in nuclear science and engineering.

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Disclaimer: Official program requirements are available in the OSU Catalog. If there is a conflict between what is stated here and what is presented in the catalog, the OSU Catalog requirements take precedence.

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1 Getting Settled

The School of Nuclear Science and Engineering (NSE) resides in Batcheller Hall, Merryfield Hall, and the Radiation Center (RC) – the facility that houses OSU's TRIGA nuclear research reactor and other research labs. The RC is an instructional and research facility specially designed to accommodate programs involving the use of radiation and radioactive materials. This unique facility was designed and established to accommodate internal and off-campus instructional and research programs involving nuclear engineering, nuclear science, radiation protection, nuclear chemistry, and other related areas.

1.1 Radiation Center Orientation Program

The RC conducts a general occupational and radiation safety orientation and training program for all individuals housed in the RC. You must complete the NSE safety orientation in order to obtain keys or an After-Hours Work Permit, which authorizes you to be in the RC outside of normal business hours (8 am – 5 pm, Monday through Friday). Please see the RC Administrative Assistant in C100 for more complete instructions on obtaining keys and an After-Hours Work Permit if you have an office/grad student space in the RC and miss the NSE graduate orientation.

The security of your keys is important for everyone's safety in the RC. It is imperative that any loss of keys is reported immediately to the RC Administrative Assistant. You are requested to exercise the utmost care in the use of your keys. Under absolutely no circumstances are keys to be loaned to other individuals. Graduate students who will be absent from the RC for a prolonged period should leave their keys with the RC Administrative Assistant in C100. In addition, keys must be returned when you finish your residency at the RC. Let the RC Administrative Assistant know of your pending departure at least a week in advance so the proper exit procedures can be followed.

Campus Security patrols the RC periodically outside of business hours (5 pm – 8 am). Anyone without an After-Hours Work Permit and a valid photo ID will be required to leave the building. Office and laboratory doors and windows are to be kept closed and locked when the room is not occupied. Security patrols will lock any open, vacant rooms. Do not let anyone into the building during after-hours. Individuals who are authorized to be in the building during after-hours are issued appropriate access codes and keys. Guests or family members are not allowed in the RC during after-hours. Anyone abusing this system will have their After-Hours Work Permit revoked.

1.2 Graduate Student Offices

NSE graduate student offices are located at the RC and Merryfield Hall. Offices are assigned to returning students and then to new students as they arrive on campus. There are limitations to space, therefore not all students will be granted a desk space. Students on graduate research assistant or graduate teaching assistant appointments will be given preference, with remaining students placed as space permits. PhD students are also prioritized over MS students. For office assignments, see the Graduate Program Chair or the Graduate Program Coordinator. Once placed, please do not change your office space without the Graduate Program Chair's approval.

1.3 Computer Use

In general, most of the large computer codes used in the School are executed on the UNIX system where their performance is maximized. [This includes the College of Engineering's High Performance Computing Cluster.]

School computers are supplied for students to perform research activities and complete coursework. They should not be used for games or other personal purposes during normal business hours (8:00am-5:00pm, Monday–Friday). After-hours personal use, within reason (as described by University policy), is allowed as long as others do not need the computers for their research or class activities. Computer use supporting funded research takes priority over use for non-funded research.

Do not copy ANY software onto the School's computer hard disks without approval from the School Head and the Network Administrator. Software licensing and disk space availability are two issues that must be considered. The installation of your own personal copies of software on the School's machines without permission exposes the School to an unacceptable potential liability and therefore cannot be allowed. Please ask permission for the installation and use of your personal software if it is important to your research or coursework. Also, please do not copy any software from the School's computers without permission. This violates software licensing agreements.

For an introduction to the College of Engineering computing resources and services see [COE Engineering Information Technology and Computing Support](#) and make sure to review their [Policies](#) tab. If you have any general questions about using University computers, please contact College of Engineering Support at coe.support@oregonstate.edu for assistance.

1.4 Parking

A valid OSU Zonal Parking Permit is required to park in any space on campus. The OSU Zonal Parking system includes seven general use zones (A1, A2, A3, B1, B2, B3, C), and two residence hall parking zones (BR, CR). The Radiation Center parking lot is designated as zone B3, while parking on Jefferson Way west of SW 35th Street is designated as zone C. Permits can be purchased online at the [Parking Services website](#). Please refer to the Parking Services website for the Parking and Shuttle Map as well as permit pricing. Parking Services can also be reached by phone at (541) 737-2583.

1.5 Smoking

Smoking is not allowed on the Corvallis campus. This includes the Radiation Center. Please consult the map on the [OSU Tobacco-Free Policy](#) for the campus boundary.

1.6 General Safety Guidelines

To comply with state and university fire prevention codes, the RC has adopted a policy which prohibits the use of personal coffee pots, hot plates, or other heating devices designed to heat water for coffee, tea, hot chocolate, etc. A refrigerator, coffeepots, hot water dispenser, and a microwave, can be found in the breakroom, B134. No one should stay "overnight" in the building.

The last person to leave a room after 5:00 pm is required to check to see that all windows are closed and that doors are locked.

First aid kits and emergency eye wash stations and fire extinguishers are located at various places throughout the Radiation Center on the walls. Names of Radiation Center personnel qualified to administer first aid are also listed as part of the first aid kits. All injury accidents are to be reported to OSU's Office of Environmental Health and Safety on forms available from the Business Manager in A102.

Building evacuation drills will be conducted during the year. Please familiarize yourself with the evacuation signals and procedures. These are posted at numerous locations throughout the Radiation Center.

Additionally, Oregon State University, the Radiation Center, and each laboratory within the Radiation Center has a Laboratory-Specific Safety Chemical Hygiene and Safety Plan. The Principal Investigator (usually your faculty advisor) is responsible for implementing the plan for their laboratory, including mandatory training for each person allowed access privileges to the respective laboratory. Familiarity with these plans is required.

If you have questions regarding any of the above or any other safety matters, please contact the RC Director.

2. Resources and Student Services

2.1 Student Resources

What is the [Office of Graduate Education](#)?

- The Office of Graduate Education at OSU assures quality and consistent interpretation of Graduate Council policies related to graduate education across all programs. The [OSU Catalog](#) is the official source for information regarding OSU graduate education policy and procedures. It is the student's responsibility to refer to the catalog for this information.
- The Office of Graduate Education supports students throughout the academic [lifecycle](#), up to degree completion.
- The Office of Graduate Education, and its campus partners, offer an array of [professional development opportunities](#) specific to the success of graduate students. Topics include research and ethics, teaching and facilitation, writing and communication, leadership and management, career skills, grad life and wellness. Please visit the Office of Graduate Education links to browse our student success offerings.

The Office of Graduate Education is committed to graduate student success and maintains an excellent repository of student resources, including:

- [The Graduate Writing Center](#) provides support for graduate students working on theses and dissertations, seminar papers, manuscripts, poster presentations, research proposals, as well as conference and defense presentations. The Center offers both written and one-on-one remote sessions with highly-trained Graduate Writing Consultants.
- [Office of Graduate Education Forms](#) is a centralized location maintained by the Office of Graduate Education with links to required forms needed throughout your graduate education (i.e. Program of Study, Exam Scheduling, Leave of Absence, Apply to Graduate, etc.)

A more complete (and regularly updated) list of campus resources can be found at the [Graduate Student Resources website](#), including [Student Health Services](#) and the [Family Resource Center](#).

2.1.1 University Emergency Contacts

OSU is dedicated to providing a safe and secure learning and living environment for its community members. [The Department of Public Safety](#) provides resources, information, emergency phone numbers, and protocols for maintaining personal safety. Sign up for [OSU Alerts](#) to get timely messages delivered right to your phone or inbox regarding university closures and other emergency situations.

2.2 Professional Organizations

NSE faculty and students are actively engaged in several professional organizations including the [American Nuclear Society](#), the [Health Physics Society](#), and the [Institute of Nuclear Material Management](#). Opportunities exist to participate in the OSU Clubs and as a student member in the professional societies. Participation often includes benefits such as conference attendance, placement services, access to journals, and opportunities to present papers. OSU student organizations that are recognized as Clubs will elect officers once each year. Please contact the faculty member representing the professional organization of interest.

- American Nuclear Society and Health Physics Society (ANS/HPS)
 - Faculty Advisor: Dr. Madicken Munk
- Institute for Nuclear Materials Management (INMM)
 - Faculty Advisor: Dr. Sasha Chemey

Information regarding other OSU Student Organizations and Clubs can be found here: <https://clubs.oregonstate.edu/findclubs>.

2.3 NSE Faculty and Staff

The faculty and staff within NSE represent a diverse set of expertise and are here to support your academic progress. You are encouraged to acquaint yourself with all of the [NSE Faculty and Staff](#).

2.3.1 NSE Graduate Program Coordinators

NSE has two Graduate Program Coordinators (one for on-campus and one for Ecampus) supporting graduate students and providing administrative support for the graduate programs. They are intimately familiar with the Office of Graduate Education's policies and are the best resource for logistical administrative questions, among other things. In their role, they maintain the repository of students' Annual Assessment of Academic Progress, exam results, and approved Program of Study documents, and they ensure all academic requirements are being met. You will need to email our graduate coordinators (see below) to assist in providing overrides to register for Thesis or Research Credits (See Section 3.8).

Lizbeth Marquez (Graduate **Ecampus** Program Coordinator): lizbeth.marquez@oregonstate.edu

Amy K. Thomson (Graduate **On-campus** Program Coordinator): amy.k.thomson@oregonstate.edu

2.4 Funding

Although many students cooperate with their major professor to create their funding plan, it is ultimately the student's responsibility to ensure that all of the [costs for their degree program are covered](#).

As available, many NSE graduate students are funded by graduate assistantships (teaching or research), fellowships (internal or external), OSU awards, or by an external source.

It is important to note that funding often comes with stipulations and restrictions. Your funding source may only allow you to receive your funding in a particular way or may restrict what your funding can be used to pay for. You may also be subject to requirements such as registering for a particular number of credits, purchasing health insurance, or submitting reports to your funding source. It is crucial that you read all documentation associated with any funding you apply for or receive to ensure that you can use it for your intended purpose and fulfill any associated requirements.

Additionally, funding is always contingent on whether a student is making satisfactory academic progress, has performed well in their prior funding assignment(s), and budget constraints or competing needs in programs.

The below (non-exhaustive list of) links are provided to provide additional information on various funding sources:

- [Graduate Assistantships](#) (GAs, GRAs, GTAs) [see also section 3.7 in this handbook]
- [Graduate Fellowships](#)

- [External awards, scholarships, and fellowships](#)
- [Office of Graduate Education Awards](#)
- [Financial Aid](#)

2.5 Facilities

The School of Nuclear Science and Engineering is housed, in part, in the [Radiation Center](#), an instructional and research facility established specifically to accommodate nuclear related research programs, to provide a location for the use of radionuclides and ionizing radiation sources, and to provide sources of fast and thermal neutrons and gamma rays. Major facilities at the OSU Radiation Center include: a 1.1 MW TRIGA research reactor and associated facilities, including a rotating sample rack, a pneumatic transfer irradiation system, a thermal column, in-core irradiation tubes (with and without cadmium), and four beam port facilities; a cobalt-60 gamma-ray irradiator; state-of-the-art digital gamma-ray spectrometers and associated germanium detectors; and various radiochemistry laboratories.

The School of Nuclear Science and Engineering is equipped with state-of-the-art nuclear and radiation protection instrumentation and computing facilities. In addition to radiation facilities, there are laboratories dedicated to the investigation of other phenomena important to the study of nuclear science and engineering, including a number of large-scale experimental test facilities.

For more information, please see the School's Research and Lab [Facilities](#).

3 Academic Progress and Expectations

Graduate students are expected to read the academic policies governing graduate study at OSU including, but not limited to, the [OSU Catalog](#), the [Office of Graduate Education policies](#), and the [OSU's Student Conduct and Community Standards](#). The information provided in this section of the NSE Graduate Handbook addresses only a few topics regarding those policies.

3.1 Typical Timelines of Graduate Student Progress/Milestones

Master's

First Year

- Establish Graduate Program Committee (MS)
- Finalize and file Program of Study with Office of Graduate Education (MS, MEng, MHP)
- Complete your 1st Annual Assessment of Academic Progress (MS)

Second Year

- *MS*: Submit Master's Thesis and take Final Oral Examination/Defense
- *MEng/MHP*: Complete *WR 545 Technical Writing for Professional Engineers* in your final (or penultimate) term of the program. Complete/submit your exam scheduling form (Final Alternative Summative Assessment) with the Office of Graduate Education during your last term of classes.

PhD

First Year

- Establish Graduate Program Committee
- Schedule and conduct Program of Study Meeting and file Program of Study (spring term)
- Typically end of first year, complete Part I of NSE Qualifying Exam
- Complete your 1st Annual Assessment of Academic Progress

Second Year

- Following completion of Part I of NSE Qualifying Exam, complete Part II of NSE Qualifying Exam by the end of second year.
- Complete your 2nd Annual Assessment of Academic Progress

Third Year

- Take Doctoral Preliminary Oral Examination (typically in year 3 or 4)
- Complete your 3rd Annual Assessment of Academic Progress

Fourth-Fifth Years

- Complete your 4th and 5th Annual Assessment of Academic Progress
- Submit Dissertation and take Final Examination/Defense

See also:

- Office of Graduate Education [Flow Chart for Master's Degree Completion](#)
- Office of Graduate Education [Flow Chart for Ph.D. Completion](#)

3.2 Advisor/Major Professor

For MHP and MEng students, your Graduate Program Coordinator will serve as your primary advisor in course selection, though the NSE Graduate Chair will be listed as your major advisor on applicable degree paperwork.

PhD and MS students should make an initial appointment to see their faculty advisor prior to registering. Your advisor will help you plan your schedule and make sure requirements are fulfilled. You are, however, ultimately responsible for seeing that you have fulfilled all the requirements necessary for graduation. It is the responsibility of each student to propose a viable program.

Your major professor (faculty advisor) will guide your research efforts to completion and oversee all aspects of your graduate studies. You will have a close working relationship with this individual for the duration of your degree program, and ongoing professional contacts thereafter. The student is also responsible for actively seeking information about individual research projects. Good sources of information are the professors themselves and their graduate students.

3.3 Academic Performance

A graduate student is expected to maintain a grade point average of 3.00 or better in (1) each registered quarter, (2) each major or minor field in their program, and (3) in their overall cumulative graduate program at Oregon State University. Grades below "C" (2.00) cannot be used on a graduate program of study. Failure to maintain these standards is considered grounds for terminating a student's program and/or financial support. For PhD and MS students, a cumulative GPA of 3.00 or better is required before the final oral exam may take place. For MHP and MEng students, a cumulative GPA of 3.00 or better is required before the application for graduation can be approved.

If a graduate student is not successful in achieving a C or better in any required course, no more than one retake attempt of that required course will be allowed.

3.4 Annual Self-Evaluation

Early in their programs, all NSE **MS and PhD** students should collaborate with their major professor and graduate committee to establish standards and expectations of satisfactory progress. Student progress will be assessed annually. An assessment of academic progress is made by the student, the student's major professor and, if requested, by other members of the student's graduate committee. Any member of the committee may provide an evaluation of student progress for inclusion in the assessment package, but this is optional. Follow the steps described in [Assessment of Graduate Student Academic Progress](#). It is the responsibility of the student to conduct a self-assessment, arrange to meet with their major professor to review their academic progress, and to submit the signed and completed appropriate form to the NSE Graduate Program Coordinator no later than June 30th each year. Links to the individual forms can also be found on the [NSE Graduate Advising](#) page.

3.5 Research Integrity

The conduct of research is a central educational component for MS and PhD degrees. The conduct of research comes with certain ethical and legal responsibilities. It is the expectation of the School that you conduct your research activities with the highest standards of integrity, including compliance with all ethical, regulatory, and University requirements.

Responsible Conduct of Research (RCR) Training is required for all NSE MS and PhD graduate students. To complete your RCR training:

1. Go to: <https://about.citiprogram.org/>
2. Register as a new user by clicking on the white Register box near the upper right-hand corner of CITI's homepage.
3. Complete the seven-step, online CITI-Learner Registration process.
 - a. Enter "Oregon State University" in the "Select Your Organization Affiliation" field.
 - b. Enter your personal information and your @oregonstate.edu e-mail address (so OSU will pay your course fees for any training you take on the CITI website). Do not use a personal e-mail or you will be charged for the courses you complete.
 - c. Complete steps 3-7.
4. Log into your CITI account.
5. Select "Oregon State University Course" from the dropdown menu.
6. Under the heading, "My Learner Tools for Oregon State University" choose "Add a Course."
7. Answer Questions 1-3 and Question 6 as "Not at this time," leave Question 4 unanswered, and choose "Responsible Conduct of Research" for Question 5, and hit the Submit button at the bottom of the curriculum selection form.
8. Now a course entitled "Responsible Conduct of Research (All Disciplines)" should be listed in your Oregon State University Courses dropdown, click on the title of the course.
9. Select "Complete the Integrity Assurance Statement before beginning this course."
10. Read and agree to the assurance statement and other for accessing CITI Program materials and submit the form.
11. Complete the modules within the RCR course. Each module will take 5 to 30 minutes to complete. You do not need to complete all modules at one time.
12. Upon completion of the entire course, you will see a message that tells you that a completion report has been sent to Oregon State University. That report goes to OSU's Office of Research Integrity. NSE is not copied on the report. Therefore, please provide a copy of your certificate of completion report to a NSE Graduate Coordinator (See Section 2.3.1) with the title of "RCR Training Certificate-YOUR FULL NAME".

3.6 Program of Study

All students are required to complete a Program of Study outlining the courses they will take to meet their degree requirements. The Program of Study is a contract between the student, the School, and the University (the Office of Graduate Education). Students must first establish a graduate committee that meets the minimum requirements of the Office of Graduate Education [Committee Composition](#). For every

graduate degree, all committee members must approve and sign the [Digital Program of Study](#). For doctoral degrees, students must first convene a Program Meeting with all of their committee members prior to submitting the Program of Study. It will then be routed for digital signature in DocuSign for approval by individuals representing the Program, School, and Office of Graduate Education. ***The Program of Study***

form is to be submitted before completing 18 credit hours.

Note: For MS and PhD students – A copy of the RCR completion certificate must be sent to a NSE Graduate Coordinator (step 12 in the RCR training process above in section 3.5) before a program of study is submitted for approval.

3.7 Grievances

If a student is unable to resolve a disagreement with their advisor, the Graduate Committee Chair, the Graduate Committee, and/or another NSE administrator, they are strongly advised to first attempt to work out the problem with the aid of the next person in the chain of authority (e.g. start by talking with the Graduate Committee Chair for a disagreement with your advisor, and so on). If you are not sure where to start, your Graduate Program Coordinator can also be a good resource to discuss options. We are committed to providing you with a quality education and a positive experience and will address issues seriously. If your issue is beyond the scope of the department, we can refer you to more appropriate resources.

If still unsatisfied, students desiring to appeal matters relating to their graduate degree should follow the [Grievance Procedures for Graduate Students](#). Graduate Assistants, whose terms and conditions of employment are prescribed by the [collective bargaining agreement](#) between OSU and the Coalition of Graduate Employees, American Federation of Teachers Local 6069, should also refer to that document and seek guidance from OSU's Office of Human Resources.

3.8 Dismissal from Graduate Program

Advanced-degree students (regularly, conditionally, and provisionally admitted) are expected to make satisfactory progress toward a specific academic degree. This includes maintaining a GPA of 3.00 or better for all courses taken as a graduate student and for courses included in the graduate program, meeting program requirements, and/or participating in research activity. Failure to meet this expectation could lead to academic warnings, and eventually dismissal from the program.

Academic dishonesty and other violations of the [Code of Student Conduct](#) may serve as grounds for dismissal from the graduate program.

3.9 Graduate Assistantships

Graduate research or teaching assistants are typically appointed for an academic year (9 months), provided the recipient is a graduate student in good standing. Annual performance evaluations will be completed by the graduate student's supervisor, and these evaluations will factor into a student's employability. No appointment can be for less than 0.40 FTE ("full-time equivalence") or more than 0.49 FTE. All graduate assistants are required to carry out the duties assigned by their faculty supervisor to justify their stipend. For example, graduate assistants on a 0.40 FTE appointment are expected to provide an average of 16 hours of service per week. This service is in addition to the time required to complete the thesis research. Graduate assistants at other FTE levels would provide proportional levels of service.

University policy dictates that a graduate assistant must be enrolled for no less than 12 credit hours in any term in which they are supported, except for the summer term which requires a minimum of 3 credit hours.

Students who hold more than one job on campus may not work more than a total of 20 hours per week or 255 hours per term for all positions held. Maintaining a GPA of 3.00 or better is required for continuing financial support.

Graduate Assistants (GAs) are covered by the [Coalition of Graduate Employees and OSU \(CGE-OSU\) contract](#). The Coalition of Graduate Employees (CGE), the union representing graduate employees, also provides [resources](#) to help navigate employment at OSU.

3.10 Registration Requirements

Students register for classes via Beaver Hub (<https://technology.oregonstate.edu/services/beaver-hub>). For more information on how to add a course, and for term deadlines, visit the Office of Registrar's [Adding Courses](#).

Minimum Registration Requirements

- EVERY student must register for a minimum of 3 credits, including:
 - Any Summer term in which a student enrolls.
 - The term in which the thesis or dissertation (MS or PhD) is defended, or the summative assessment (MHP or MEng) is completed.
 - Any term a student uses university space and facilities or requires supervision of the major professor, regardless of the student's location (on-campus or Ecampus).
- GTAs /GRAs must register for at least 12 credits (Fall, Winter, and Spring terms).
 - Auditing a class or enrolling in Continuing Higher Education and other self-support programs may not be used to satisfy enrollment requirements for graduate assistant tuition remission.
- Students receiving financial aid must contact the [Financial Aid Office](#) for specific registration requirements per term. Students must notify Financial Aid if they plan on enrolling less than full time.

Maximum Registration Requirements

- Graduate students can register for a maximum of 16 credits each term. Students must receive permission from their major professor and the Office of Graduate Education to register beyond 16 credits.

Full-Time and Part-Time Enrollment

- Full-time graduate status is an enrollment of 9 credits per term (including Summer).
- Financial Aid for part-time graduate students is evaluated based on their part-time enrollment; students must contact Financial Aid for specific requirements.

- International students should verify registration requirements of their visas with the [Office of International Services](#).

Late Registration

- Registration that occurs after the [registration deadline](#) requires the submission of a [Petition for Late Change of Registration](#).

3.10.1 Research and Thesis Credits

Registration for Research or Thesis credits requires the approval of your major professor/advisor and a registration override. This process is best completed through email. Registration override requests can be sent to your NSE Graduate Coordinator (See Section 2.3.1).

When requesting a registration override, please include your **OSU ID number** and the **course registration number (CRN)**.

- **Research Credits:** Graduate students in the School of Nuclear Science and Engineering are **NOT allowed to use NSE 501 or NSE 601 (Research) credits to fulfill requirements on a graduate program of study.**
- **Thesis Credits:** Graduate students pursuing Master of Science degrees must include 6 credits of NSE 503 (Thesis) on their program of study. The program of study for a PhD student must include at least 36 credits of NSE 603 (Thesis).

3.10.2 NSE Seminar

All graduate students are required to take at least three NSE Seminar classes (NSE 507/607) during their graduate studies; this is intended to develop your understanding of the profession and to develop communication skills. Additional requirements may be set by the student's major or minor professor, by the School, or by the student's advisory committee as needed to strengthen his or her background. Only *three* seminar credits can be counted on a Program of Study.

3.10.3 Summer Term

The University requires that graduate students who occupy labs, office space, or utilize University facilities during the summer quarter register and pay fees. Graduate Assistants on appointment during the summer term normally must register for a minimum of 3 credits. However, summer graduate assistant employees must register at half-time status to avoid having FICA taxes (Social Security and Medicare) withheld from their paychecks. For graduate students, this minimum is 5 credits. It is recommended that you discuss this with your major advisor before registering for the summer term.

3.10.4 Leave of Absence

You must fill out a [Leave of Absence Request](#) and have it approved by the Office of Graduate Education (at least 15 business days prior to the start of the term) if you need to take off a term (Fall, Winter, or Spring) for any reason.

- Leave of Absence is granted in up to three-term increments, excluding summer session. Time spent in on-leave status will be included in all time limits pertaining to your degree program. Students who matriculate fall term 2016 or later may use unlimited leaves as long as time to degree constraints are met (7 years for master's degrees and graduate certificates; 9 years for doctoral

degrees). Leaves of absence must be renewed to retain student status. Failure to renew the leave of absence or register will result in the loss of student status.

- Notify your NSE Graduate Program Coordinator (See Section 2.3.1) and your academic advisor if you need to take a leave.
- You never need to fill out a leave form for summer term.
- A graduate student who takes an unauthorized break in registration by failing to maintain continuous enrollment or by failing to obtain regular or planned leave of absence will relinquish his or her graduate standing in the university. Students who wish to have their graduate standing reinstated will be required to file an Application for Graduate Readmission and pay the readmission fee. The readmission application must be approved by the student's major professor, department/school/program chair, and graduate dean. Acceptance back into a graduate program is not guaranteed even if the student departed in good standing. The petitioner for readmission will be required to meet university and departmental admission requirements and degree completion requirements that are in effect on the date of readmission. Review of the Application for Graduate Readmission may also result in a change of residency status from resident to nonresident.
- International students should check with the [Office of International Services](#) about registration requirements.

For more information about the Office of Graduate Education's policies,

- See the OSU Catalog under [Policies Governing All Graduate Programs](#), OR
- Contact the OSU Office of Graduate Education at 541-737-4881.

3.11 Health Insurance and Immunization Requirements

[Student Health Services](#) offers clinical and wellness services and information regarding immunization requirements.

[Graduate Student Employee & Fellowship Insurance Plans](#) are covered by the Office of Human Resources. Please email gradhealth@oregonstate.edu, call 541-737-7568 or visit room 236 in the Kerr Administration Building for assistance.

3.12 Tuition Bills

Information regarding the payment of tuition or OSU bills can be found at the [Student Billing](#) website. Please direct any questions about tuition, fees, and financial aid to the [Student Account Services](#) in the Business Affairs Office.

4 Master's Degree Programs

Oregon State University's learning outcomes for Master's degree programs state that students shall:

1. Conduct research or produce some other form of creative work.
2. Demonstrate mastery of subject material.
3. Conduct scholarly or professional activities in an ethical manner.

The School of Nuclear Science and Engineering (NSE) offers several degree programs in [Nuclear Engineering](#) and [Radiation Health Physics](#). The School currently offers the following Master's degrees:

- Master of Science (MS);
- Master of Engineering (MEng); and
- Master of Health Physics (MHP).

The master's degrees above require a minimum of 45 credits to graduate. Additional credits above 45 may be required depending on the educational background of the student. All students must complete a [Program of Study](#) form before completing 18 credits.

It is the policy of the NSE Faculty that a minimum of 45 credits are required for the MS degree, of which no more than 9 blanket credits (excluding thesis credits) can be applied. Of these 9 blanket credits, 3 credits (no more, no less) must be Seminar (NSE 507). If additional blanket credits are to be included, those credits must be graded (not pass/fail). In addition, for MS students, 6 credits (no more, no less) of Thesis (NSE 503) must be included on the program of study.

Master of Science

A thesis in the major area is required for the MS degree, and the [thesis format](#) is bound by the rules of the Office of Graduate Education and the policies of the School of NSE. Visit the Office of Graduate Education's website for details. Six, and only 6, of the required 45 credit hours must be Thesis credits.

Master of Engineering (NE only) and Master of Health Physics (RHP only)

The MEng and MHP degree options provide students with the opportunity to pursue advanced-level study without the requirement of completing thesis research. Both degrees include major-specific core coursework requirements, but *also additionally include* a required course on ethics, and a required technical writing course. These degrees are intended as terminal degrees, not as preparation for a doctorate degree, and will emphasize job-related knowledge and skills. Although not required, students wishing to pursue a PhD in the future are advised to pursue an MS degree, not the MEng or MHP degree.

Minor (NE or RHP)

A minor field of study is optional. If a [minor](#) is declared, however, the minor credit hour requirement specified by the Office of Graduate Education is 15 hours minimum. Master's students are expected to take 18 hours or more of minor subject courses if the minor is "integrated"; i.e. it spans two or more academic units. The NSE Graduate Committee may apply suitable courses to such an integrated minor requirement as long as

the courses are not in your major area of concentration, and they comprise less than one-half of the credits in the minor.

It is the policy of the NSE faculty that it is acceptable for an NE student to obtain a RHP minor, and vice-versa, with a minimum of 15 credits from the courses listed below, respectively.

- RHP Minor: NSE 519 (4), NSE 582 (4), NSE 583 (3), NSE 588 (3), NSE 590 (3)
- NE Minor: NSE 551 (3), NSE 553 (3), NSE 557 (2), NSE 567 (4), NSE 573 (3)

4.1 Master of Science

In this document, “thesis” refers to the manuscript written for a master’s degree, while “dissertation” refers to the manuscript written for a doctoral degree. The thesis demonstrates the mastery of professional knowledge in a particular subject area of the student’s chosen field. It must present innovative research or a novel application of a known methodology to appropriate problems. A conscientious survey of pertinent literature is a prerequisite to an acceptable thesis. The research topic must be approved by the major professor, and the research title must be registered with the Office of Graduate Education.

It is the policy of the NSE Faculty that MS students will follow the thesis formatting as stated under “Standard Document Format” in the OSU Office of Graduate Education [Thesis Guide](#). The “Manuscript Document Format” will not be allowed for a master’s thesis.

Since the thesis results from a significant body of work, the student is encouraged to publish the results of the thesis in the open literature. The student cannot schedule a defense exam with the Office of Graduate Education until the major professor approves the thesis for distribution to all committee members. Once approved, the student must submit a copy of the thesis to each committee member and complete the [Exam Scheduling Form](#) with the Office of Graduate Education *at least two weeks prior to the intended defense date*. See your major professor for any other rules regarding thesis defense preparation requirements.

An MS candidate will complete a two-hour final oral comprehensive examination, which includes a thesis research presentation, defense of the research, and exam questions on major, minor, and other pertinent academic subjects.

Thesis Guide

It is important to refer to the Office of Graduate Education’s [Thesis Guide](#), which explains the specific formatting criteria and submission process. Students are encouraged to review the site before starting to write the thesis to ensure understanding of the formatting, procedures, and deadlines.

4.1.1 Thesis Defense Committees

1. The principal authority over a student’s program resides with the student’s master’s committee. This committee is responsible for:
 - assuring that University and School requirements are satisfied; and
 - administering the final oral examination.
2. The Committee must comply with the [Office of Graduate Education's Committee Composition](#), which for an MS consists of at least 4 members:
 - the student’s major professor, who must be an NSE tenured/tenure-track (T/TT) faculty member, NSE research faculty, or Senior Instructor;
 - one other NSE faculty member;

- the student's minor professor, or if no minor is selected, this committee member may be selected from graduate faculty at-large; and
- the Graduate Council Representative (GCR).

Note, at least two committee members must be NSE tenure-track (T/TT) faculty.

The composition of a student's Master's Committee MUST be approved by the major professor.

3. The committee is formed, with approval from the major professor, at the student's invitation.
4. A Graduate Council Representative (known as a GCR or Grad Rep) is required for all degrees involving a thesis. Your GCR represents the OSU Graduate Council and ensures that all rules governing committee procedures are followed. Your GCR must be present at your formal exam(s) and will be responsible for some of the paperwork that the Office of Graduate Education requires. Per Office of Graduate Education guidelines, the GCR will also lead your committee's roundtable discussion following your final oral exam. Your GCR must be a graduate faculty member outside your major and minor area.

The GCR is a full voting member of your graduate committee. Select your GCR using the [online GCR list generation tool](#) and be sure to allow ample time for this selection process. A common outreach method is to email all possible GCRs at once using the bcc email option. This will allow you to efficiently reach out to those listed on the GCR generated list. If you run into difficulty finding a GCR to serve on your committee, you can re-generate the list until you find someone who is willing to serve.

For more information on how to identify a GCR watch the short video [Finding a Graduate Council Representative](#).

4.1.2 MS in Nuclear Engineering

At a minimum, students shall include all courses listed below in Table 1 in their Program of Study.

The remainder of the student's major program can include any other 500 or 600 level courses as APPROVED by the major professor. Note that at least 24 credits must be graded graduate level NSE courses.

Major Core Courses for All NE Students	Number of Credits
NSE 531 – Radiophysics	3
NSE 536 – Advanced Instrumentation	4
NSE 535 – Radiation Shielding and External Dosimetry	4
Major Core Total	11
<i>NOTE: Those students who have taken an undergraduate course in nuclear physics with a satisfactory grade (B or better) are not required to take NSE 531 and could substitute another NSE course for NSE 531; Those students who have completed NSE 435 (or equivalent) shall substitute another NSE course for NSE 535.</i>	
Restrictive electives NSE courses to be selected by the student and major advisor(s)	10 or more
Electives	15 or fewer
To be determined by the student with major advisor(s) <i>NOTE: These courses can be NSE or other courses</i>	
Other Requirements NSE 503 – Thesis NSE 507 – Seminar	6 3 (1 each)
Responsible Conduct of Research Training	See Section 3.4
Minimum Required Credits for the Degree	45

Table 1: Courses for MS in NE

NOTE: Term offerings may be subject to change. Consult the OSU Catalog each term.

4.1.3 MS in Radiation Health Physics

- At a minimum, the student's Program of Study shall contain the courses in Table 2 below (or equivalent).
- The remainder of the student's major program can include any other 500 or 600 level courses as APPROVED by the major professor. Note that at least 24 credits must be graded graduate level NSE courses.

Major Core Courses for All RHP Students	Number of Credits
NSE 515 – Nuclear Rules and Regulations or NSE 514 – Nuclear Ethics and Governance	2
NSE 519 – Radiochemical Analysis	4
NSE 531 – Radiophysics	3
NSE 535 – Radiation Shielding and External Dosimetry	4
NSE 536 – Advanced Instrumentation	4
NSE 582 – Applied Radiation Safety	4
NSE 583 – Radiation Biology	3
NSE 588 – Radioecology	3
NSE 590 – Internal Dosimetry	3
Major Core Total	30
Other Requirements / Electives	
NSE 507 - Seminar	3 (1 each)
NSE 503 – Thesis	6
500 or 600 level courses (electives) as approved by major professor	6 or more
Other Requirements / Electives Total	varies
Responsible Conduct of Research Training	See Section 3.4
Minimum Required Credits for the Degree	45

Table 2: Courses for MS in RHP

NOTE: Term offerings may be subject to change. Consult the OSU Catalog each term.

4.2 Non-Thesis MEng or MHP

The 45-credit coursework-based master's degrees (MEng and MHP) provide students with the opportunity to pursue advanced-level study without the requirement of completing thesis research.

4.2.1 Summative Assessment

A summative assessment is required by the Office of Graduate Education for non-thesis MEng and MHP degrees. A “summative assessment” is the counterpart/alternative to the oral exam/defense of a research-based MS degree. For students pursuing a course-based master's degree, the summative assessment of their work is grounded in successful completion of WR 545, a technical writing course which supports completion of a final portfolio (which is then submitted to NSE during a student's final term, signifying to the program their intent-to-graduate). *(In rare cases, a student can appeal to the NSE Graduate Committee to use the Final Oral Exam* format as an alternative summative assessment method. Such appeals will be evaluated on a case-by-case basis.)*

WR 545 Technical Writing for Professional Engineers

All MEng and MHP students must successfully complete *WR 545 Technical Writing for Professional Engineers* in their last term in the program. This course may also be taken in a student's penultimate term in the program. This course *cannot be taken before* a student completes a total of 30 credits, inclusive of the required ethics course as well as the required, core, coursework.

Submission of Alternative Summative Assessment Exam Paperwork

Students enrolled in WR 545 will complete a final portfolio in that course. Please submit this document to your Graduate Program Coordinator (See Section 2.3.1) via email after you have submitted this as your final assignment in WR 545.

No later than 2 weeks before the end of your final term, complete the [Exam Scheduling Form](#) with the Office of Graduate Education. You will use this form to “schedule” your “Alternative Summative Assessment.” While this is not an event on a set date, you will need to complete the required fields on this form. The Graduate Chair of NSE serves as the signer for this paperwork and this is who you should list as your major professor when submitting your exam scheduling form. This form triggers a final review/audit of your degree program by the Office of Graduate Education, as well as providing paperwork to your program to complete the Summative Assessment for your degree.

***Final Oral Exam**

Note: This option is used in limited special circumstances for MEng and MHP degrees and is only available upon approval of the NSE Graduate Committee.

The following guidelines are written to help the student prepare for the oral exam. In addition to these guidelines, all rules of the Office of Graduate Education pertaining to final [Master's oral exams](#) must be adhered to.

1. The Committee must comply with the rules regarding [Office of Graduate Education's Committee Composition](#), which for a non-thesis Master's consists of three members:
 - the student's major professor;
 - one other NSE faculty member; and
 - the student's minor professor, or if no minor is selected, an additional NSE faculty member.
Note: No Graduate Council Representative is required for an MHP or MEng oral exam.
2. The makeup of the exam committee must be approved by the student's major professor.
3. The exam shall be scheduled by the student, after consultation with all committee members, for a two-hour period. Scheduling shall be done through the Office of Graduate Education using their [Exam Scheduling Form](#).
4. The student shall be given the option of selecting an area of concentration for the exam. The majority of exam questions will then be derived from material in that area. Exam concentration areas must be discussed with the student's major professor. The student must declare, to all committee members, the concentration choice at least one week prior to the exam.
5. Master's candidates who fail the oral examination on the first attempt may be given the opportunity, by the exam committee, to retake the exam or may be asked to leave the program without receiving the degree. Students are allowed to retake the exam one time only. Any student failing the second attempt will be dismissed from the program without receiving the degree.

4.2.2 MEng in Nuclear Engineering

- At a minimum, students shall include all courses listed below in Table 3 in their Program of Study.
- The remainder of the student's major program can be a compilation from any other 500 or 600 level courses as APPROVED by the major professor.

Major Core Courses for All NE Students	Number of Credits
NSE 531 – Radiophysics	3
NSE 536 – Advanced Instrumentation	4
NSE 535 – Radiation Shielding and External Dosimetry	4
NSE 551 – Applied Nuclear Reactor Physics	3
NSE 573 – Nuclear Reactor Systems Analysis	3
NSE 567 – Nuclear Reactor Thermal Hydraulics	4
NSE 582 – Applied Radiation Safety	4
Major Core Total	25
<i>NOTE: Those students who have taken an undergraduate course in nuclear physics with a satisfying grade (B or higher) are not required to take NSE 531 and may substitute another NSE course for NSE 531; Those students who have completed NSE 435 (or equivalent) shall substitute another NSE course for NSE 535.</i>	
Ethics	
NSE 514 – Nuclear Ethics and Governance Or EMGT 554 – Professional Responsibility and Ethics	3
Technical Writing*	
WR 545 – Technical Writing for Professional Engineers	3
Electives	
To be determined by the student with major advisor(s) <i>NOTE: These courses can be NSE or other courses</i>	11
Other Requirements	
NSE 507 – Seminar	3 (1 each)
Minimum Required Credits for the Degree	45

Table 3: Courses for MEng in NE

NOTE: Term offerings may be subject to change.

***Before enrolling in the technical writing course, students are required to complete a total of 30 credits that includes the ethics requirement and core coursework.**

Students who switch from the MS or PhD program into the MEng program in their last quarter of study may request an oral exam representing their work during their studies with the committee they formed for their MS or PhD program.

4.2.3 MHP in Radiation Health Physics

- At a minimum, the student's Program of Study shall contain the courses in Table 4 below (or equivalent).
- The remainder of the student's major program can be a compilation of any other 500 or 600 level courses as APPROVED by the major professor. Note that at least 24 credits must be graded graduate level NSE courses. A [Sample Degree Progression Plan](#) is provided for Ecampus Students.

Major Core Courses for All RHP Students	Number of Credits
NSE 519 – Radiochemical Analysis	4
NSE 531 – Radiophysics	3
NSE 535 – Radiation Shielding and External Dosimetry	4
NSE 536 – Advanced Instrumentation	4
NSE 582 – Applied Radiation Safety	4
NSE 583 – Radiation Biology	3
NSE 588 – Radioecology	3
NSE 590 – Internal Dosimetry	3
Major Core Total (for all)	28
Ethics NSE 515 – Nuclear Rules and Regulations (2) Or NSE 514 – Nuclear Ethics and Governance (3)	2 or 3
Technical Writing* WR 545 – Technical Writing for Professional Engineers	3
Electives To be determined by the student with major advisor(s) <i>NOTE: These courses can be NSE or other courses</i>	9 or fewer
Other Requirements NSE 507 – Seminar	3 (1 each)
Minimum Required Credits for the Degree	45

Table 3: Courses for MHP in RHP

NOTE: Term offerings may be subject to change. Consult the OSU Catalog each term.

***Before enrolling in the technical writing course, students are required to complete a total of 30 credits that includes the ethics requirement and core coursework.**

4.3 Master's Degree Progression and Deadlines

The Office of Graduate Education maintains a [Master's Degree Flowchart](#) of steps required to obtain the MS, MHP, or MEng degree.

Please refer to the [Master's Student Timeline](#) that includes additional links to details regarding committee formation, program of study, initial program meeting, scheduling your oral examinations, application to graduate, and submission of your final thesis document. Master's students' work must be completed within seven years, including transfer credits, course work, and the thesis/oral exam.

Master's students should be familiar with the specific and detailed information contained in the OSU Catalog and the Office of Graduate Education website, as well as NSE requirements. Final oral exams must be scheduled through the Office of Graduate Education using their [Exam Scheduling Form](#) and may only be scheduled during periods when classes are in session (including finals week). MHP or MEng students completing their coursework will still need to complete "exam" paperwork during their last term of studies.

4.3.1 Notes about Master's Program of Study

MS students should work with their major professor to complete their [\(Digital\) Program of Study](#). You will need to submit the Program of Study for digital signature in DocuSign for approval by your committee and individuals representing the Program, School, and Office of Graduate Education.

MEng and MHP students should work with the MEng/MHP course advisor (in most cases, this is your Graduate Program Coordinator) to complete their Program of Study.

For various reasons, differences often occur between the classes you plan to take and what you actually end up taking to earn your degree. When you graduate, the Program of Study must be 100% accurate. You should compare the Program of Study on file with your transcripts, which can be [viewed by logging into Beaver Hub](#). Make corrections by filling out the [Petition for Change in Program of Study form](#) at least one term before your final oral exam (defense). You do not have to fill it out each time you deviate from your original program; however, you need to keep your committee informed of any and all changes since they must approve your final Program.

5 Doctoral Degree Program

Oregon State University's learning outcomes for Ph.D. degree programs state that students shall:

1. Produce and defend an original significant contribution to knowledge.
2. Demonstrate mastery of subject material.
3. Conduct scholarly activities in an ethical manner.

The School of NSE offers Doctoral Degrees in the following programs:

- [Nuclear Engineering](#) (NE); and
- [Radiation Health Physics](#) (RHP).

5.1 Course of Study

All students must complete a [Program of Study](#) form before completing 18 credits.

1. Requirements for the doctorate include:
 - a) at least 108 graduate credits beyond the Bachelor's degree;
 - b) at least 50% of the course work must be graduate stand-alone courses;
 - c) a minimum of one year of residence, continuously, at OSU (i.e., three consecutive terms as a full-time student);
 - d) passing a preliminary oral examination in the major subject; and
 - e) successfully defending the dissertation.

For other regulations, see the OSU Catalog, Office of Graduate Education website and School of NSE policies.

2. In addition, the School of NSE's requirements include:
 - a) total non-thesis coursework of 36 credits or more, of which at least 18 credits must be from graduate-level courses in the areas of nuclear science and engineering taken at OSU or other institutions as approved by the student's Doctoral Committee;
 - b) completing Responsible Conduct of Research Training (see Section 3.12);
 - c) passing a qualifying examination;
 - d) calling regular (every 6 months recommended, but at least annual) meetings of the Doctoral Committee so that the student's progress can be evaluated, and guidance offered; and
 - e) preparing, presenting and defending a written dissertation proposal, i.e., the Preliminary Exam. Confer with your major professor to prepare for this exam. The Prelim Exam should be taken as soon as possible after the qualifying exam;
 - f) a presentation of an original dissertation for which a minimum of 36 dissertation credit hours (NSE 603) has been accumulated;
 - g) additional courses or thesis (NSE 603) credits to be determined by the doctoral committee, in order to meet Office of Graduate Education's degree requirements.

5.2 Doctoral Committees

1. The principal authority over a student's program resides with the student's Doctoral Committee. This committee is responsible for:
 - assuring that University and School requirements are satisfied;
 - monitoring student progress;
 - assigning and approving courses of study;
 - approving dissertation topics and paths-forward; and
 - administering preliminary and final oral examinations.
2. The Committee must comply with the [Office of Graduate Education's Committee Composition](#), which for a PhD includes at least 5 members:
 - the student's major professor, who must be an NSE tenure-track (T/TT) faculty member or NSE research faculty member, or Senior Instructor;
 - two other NSE faculty members;
 - the student's minor professor, or if no minor is selected, a committee member may be selected from the graduate faculty at-large; and
 - one Graduate Council Representative.

Note: at least two committee members must be NSE tenure-track (T/TT) faculty members.

A student's Doctoral Committee may contain more than 5 members. Any additional members beyond the required 5 must be chosen from the Approved Graduate Faculty List for NSE maintained by the OSU Office of Graduate Education.

The composition of a student's Doctoral Committee MUST be approved by the major professor.

3. The committee is formed, with approval from the major professor, at the student's invitation.
4. A Graduate Council Representative (known as a GCR or Grad Rep) is required for all degrees involving a thesis. Your GCR represents the OSU Graduate Council and ensures that all rules governing committee procedures are followed. Your GCR must be present at your formal program meeting and all exam(s) and will be responsible for some of the paperwork that the Office of Graduate Education requires. Per Office of Graduate Education guidelines, the GCR will also lead your committee's roundtable discussion following your final oral exam. Your GCR must be a graduate faculty member outside your major and minor area.

The GCR is a full voting member of your graduate committee. Select your GCR using the [online GCR list generation tool](#) and be sure to allow ample time for this selection process. A common outreach method is to email all possible GCRs at once using the bcc email option. This will allow you to efficiently reach out to those listed on the GCR generated list. If you run into difficulty finding a GCR to serve on your committee, you can re-generate the list until you find someone who is willing to serve.

For more information on how to identify a GCR watch the short video [Finding a Graduate Council Representative](#).

5. The Committee must be appointed prior to the PhD Program Meeting.

5.3 Matriculation

1. Matriculation (first term of attendance) qualifies the student to:
 - a) select a general area of dissertation research;
 - b) form a doctoral committee with the major professor's guidance and approval; and
 - c) hold the initial doctoral Program Meeting.
2. After matriculation, the student must pass a qualifying examination (described below).

5.4 Qualifying Examination for Doctoral Students

The purposes of the PhD Qualifying Exam are:

1. To evaluate a PhD student's mastery of core content in the specified subject area
2. To evaluate a PhD student's ability and preparation to conduct independent research

5.4.1 Timeline for the Qualifying Exam

All students entering the doctoral programs are required to complete the qualifying examination within 18 months of matriculation as a PhD student. Please see below for further details regarding Part I and Part II.

5.4.2 Structure of the Qualifying Exam

The PhD qualifying exam has two parts:

1. Proficiency in coursework;
2. Competency in research.

The PhD qualifying exam will be administered by an exam committee. Because the qualifying exam is an NSE-specific requirement, only NSE faculty and NSE-approved courtesy faculty serving on the student's Doctoral Committee are voting members of the exam committee. *Graduate Council Representatives (GCRs) and other non-NSE members of the Doctoral Committee may participate in the qualifying exam but serve as non-voting/non-signing members.*

Part 1: Proficiency in coursework

To complete Part 1 of the qualifying exam, the student must achieve a cumulative GPA of 3.5 or higher with no course grade less than B, calculated based on five selected courses as follows:

1. NSE 531 or equivalent approved by the exam committee;
2. Four out of five OSU graduate-level courses selected and approved by the exam committee with a minimum of 12 credits.

Formation of the exam committee and selection of the five courses for Part 1 is recommended within the student's first two terms of enrollment. The exam committee must convene as a meeting (in person or virtual) to select and approve the five courses. Best practice is to finalize the course selection at or immediately following the student's initial program meeting with their committee. Once approved and

submitted via the NSE PhD Qualifying Examination Form (Part I) to the NSE Graduate Committee, the list of selected courses cannot be changed unless a course on the list is no longer offered.

The NSE 531 equivalent course can be a graduate or undergraduate course from OSU or another institute deemed appropriate by the student's exam committee. Students entering the PhD program with prior graduate coursework (e.g., from a completed MS degree) may use that coursework toward the five courses required for Part 1, subject to exam committee approval. However, if the prior graduate coursework was not in a nuclear-related discipline, at least three of the five courses on the approved list must carry an NSE prefix. NSE 531 (or its approved equivalent) may count as one of these three, meaning at least two of the remaining four courses must also be NSE courses.

If the cumulative GPA calculated as above falls below 3.5, or any of the selected courses has a grade less than B, the exam committee must review the student's academic performance and determine if the student has demonstrated proficiency in core coursework. A negative outcome of this review will lead to the student's dismissal from the PhD program.

Passing Part 1 of the qualifying exam is required to advance to *Part 2: Competency in research*.

Part 2: Competency in research

It is the student's responsibility to survey the exam committee, select a date for the oral exam, and notify the NSE Graduate Committee. This should be done 6–8 weeks in advance of the proposed oral exam date. The lead time between scheduling and the start of the assignment period allows the major advisor sufficient time to develop a prompt specific to the student; the assignment itself will be distributed exactly four weeks prior to the scheduled oral exam date. The exam committee for Part 2 is the same NSE faculty exam committee described above.

To complete Part 2 of the qualifying exam, the student must:

1. *Generate a written summary.* Each student shall receive an assignment from the major advisor exactly four weeks before the date of the oral presentation. The content of this assignment is determined by the major advisor, which could include but are not limited to:
 - a) Critiquing a journal paper;
 - b) Conducting literature research on a given topic;
 - c) Producing a research proposal within a specified topic area.

Use standard 8.5" X 11" paper with 1-inch margins (top, bottom, left, right). Use a font size no smaller than Times New Roman 11 point. Use single column. This summary must be submitted to the exam committee at least one week before the oral presentation.

2. *Give an oral presentation.* The presentation should be approximately 45 minutes, not to exceed 60 minutes.
3. *Answer questions from the exam committee.* Following the oral presentation, the exam committee will ask questions pertaining to the student's research field or the specifics of the assignment. The questions will probe your research capability and the fundamentals of nuclear science and engineering. This section of the exam should not exceed 60 minutes.

Shortly after the oral exam, the exam committee will assign a grade of pass or fail. The major professor will provide feedback to the student and notify the NSE Graduate Committee of the exam result.

In Part 2 of the qualifying exam, students will be scored on the following:

1. The ability to think logically, express a point of view and defend it both orally and in a written form;
2. The ability to communicate an understanding of the core content of your research area;
3. Scientific writing skills.

If the student fails Part II of the qualifying examination, one additional attempt will be allowed. In this case, the student must retake the exam within *6 months* of the original oral examination. The second unsuccessful trial will lead to the student's dismissal from the PhD program.

5.5 Preliminary Oral Examination

In order for a PhD student to advance to candidacy, they must successfully complete the preliminary oral examination. Preliminary oral exams must be scheduled through the Office of Graduate Education using their [Exam Scheduling Form](#) at least two weeks before the date of your exam. PhD students will present their proposed dissertation research as part of their Preliminary Examination. This formal seminar is to be a presentation of their planned research and a review of the literature supporting this plan. In preparation for the Preliminary Examination, the student will prepare a written dissertation proposal and present this written proposal to their doctoral committee at least two weeks prior to the exam. This proposal will include a thorough literature review, an outline of the proposed research project, and a description of the importance of the research with a perspective on the current state of the area of specialty.

As a means for giving the student's committee an early chance to help direct the doctoral research, the preliminary examination will start with the student presenting their written dissertation proposal and their proposed research direction. This will be a 30-45 minute (or amount of time determined by the major professor) presentation by the student on their proposed research. The committee will then discuss this research proposal with the student. The discussion is meant to identify strengths and weaknesses within the student's preparation and proposal. It is intended to be a constructive critique of the progress achieved to date, as well as to provide focus for the student's research. The oral preliminary examination will be scheduled for a minimum of two hours.

The remaining portion of the examination will focus on the student's basic understanding of Nuclear Engineering or Health Physics (as covered in the qualifying examination) and the minor area(s), as well as all of the courses that the student has taken at OSU.

At least one complete academic term must elapse between the time of the preliminary oral examination and the final oral examination. If more than five years elapses between these two examinations, the PhD candidate will be required to take another Preliminary Examination.

5.6 Doctoral Dissertation

The dissertation should be a significant research contribution publishable in a recognized professional journal and should demonstrate the PhD candidate's competence in conducting fundamental research. It must represent a significant contribution to the existing body of knowledge in Nuclear Engineering or Radiation Health Physics. The research topic must be approved by the candidate's Graduate Committee and the dissertation title must be approved by the Office of Graduate Education. The dissertation must be based on the candidate's own investigation, show a mastery of the literature of the subject, and be written in credible literary form. In order to have the efforts of the student recognized outside of OSU, the candidate must, in addition to dissertation requirements, prepare a paper which is suitable for submission to a

recognized, scientific peer-reviewed journal. A final draft of the dissertation must be presented to the candidate's doctoral committee at least two weeks prior to the final oral examination. A [Thesis Guide](#) is available at the Office of Graduate Education website that provides detailed formatting criteria and templates.

5.7 Final Oral Examination

Final oral exams must be scheduled through the Office of Graduate Education using their [Exam Scheduling Form](#) at least two weeks before the date of your defense. The dissertation defense will be scheduled for two hours. The student is expected to defend their dissertation research and display a mastery of knowledge in their chosen field.

5.8 Doctoral Degree Progression and Deadlines

The Office of Graduate Education maintains a [Doctoral Degree Flowchart](#) outlining steps to obtain a PhD degree.

Please refer to the [Doctoral Student Timeline](#) that includes additional links to details regarding committee formation, program of study, initial program meeting, scheduling your oral examinations, application to graduate, and submission of your final dissertation. Doctoral students' work must be completed within nine years, including coursework, dissertation, and all examinations.

PhD students should be familiar with the specific and detailed information contained in the OSU Catalog and the Office of Graduate Education website, as well as NSE requirements. Note that in addition to the Office of Graduate Education timeline; NSE requires the successful completion of your Qualifying Exam (Parts 1 and 2) prior to scheduling your Preliminary Oral Exam. Program meetings, preliminary oral exams, and final oral exams may be scheduled only during periods when classes are in session (including finals week).

5.8.1 Notes About Program of Study

The Doctoral [\(Digital\) Program of Study](#) will remain in draft form until after your initial Program Meeting. You should work with your major professor to complete the draft Program of Study form. Once your entire committee approves the proposed Program of Study, you can electronically submit the form for signatures through DocuSign, which is routed to the Office of Graduate Education for approval.

For various reasons, differences often occur between the classes you plan to take and what you actually end up taking to earn your degree. When you graduate, the Program of Study must be 100% accurate. You should compare the Program of Study on file with your transcripts, which can be [viewed by logging into Beaver Hub](#). Make corrections by filling out the [Petition to Change the Program of Study form](#) at least one term before you plan to defend. You do not have to fill it out each time you deviate from your original program; however, you need to keep your committee informed of any and all changes since they must approve your final Program.

5.8.2 Notes About Scheduling & Graduating

Give yourself and your committee members a lot of time to plan for the defense date. Sometimes committee members will be on sabbatical leave during the term in which you plan to defend. You should check with your committee members about such leaves far in advance to make better plans. Planning ahead is

especially important if you need to change a committee member for any reason. Please refer to [Committee Meeting Scheduling Tips](#) for additional best practices.

The [Diploma Application](#) must be filed no later than week two of the term in which you defend. However, it is okay to fill out the form a term or two early. If you need to change your end term after you fill out the Diploma Application, just fill out the application again.

When you confirm your defense exam date with the Office of Graduate Education, you are essentially placing your exam on their calendar. **If they are not aware of your defense date, even if you filled out all the paperwork, you will not be able to defend and will have to reschedule.**

It is important to refer to the Office of Graduate Education's [Thesis Guide](#), which explains the specific formatting criteria. Students are encouraged to review the site before starting to write the thesis to ensure understanding of the formatting, procedures, and deadlines.