



**University of Idaho**

Department of Nuclear Engineering  
and Industrial Management

# **NUCLEAR ENGINEERING GRADUATE STUDENT HANDBOOK**

## Degrees Offered

Master of Engineering in Nuclear Engineering (M.Engr.)

Master of Science in Nuclear Engineering (M.S.)

Doctor of Philosophy in Nuclear Engineering (Ph.D.)

This information supplements general information in the current University of Idaho catalog. A summary of university requirements for graduate degrees can be found at [www.uidaho.edu/catalog](http://www.uidaho.edu/catalog) and [www.uidaho.edu/cogs](http://www.uidaho.edu/cogs)

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## 1.0 Introduction

This handbook describes the policies, rules, and procedures of the Nuclear Engineering (NE) Program at the University of Idaho. The College of Graduate Studies website and the general university catalog provide the rules and policies governing graduate programs and offers a multitude of resources designed to support a successful graduate experience.

Any waivers or revisions concerning the policies and requirements set forth in this handbook must be approved by the Chair of the Nuclear Engineering and Industrial Management (NEIM) Department and, in some cases, the College of Graduate Studies (CoGS). However, it should be stressed that the NE graduate program is flexible and can be adapted to the students' needs when appropriate.

If you have questions concerning the policies and procedures outlined in this handbook, please contact the NEIM Chair or the Recruitment & Student Engagement Director.

### **Indrajit Charit, Ph.D., P.E.**

Chair, Department of Nuclear Engineering & Industrial Management  
1776 Science Center Drive  
Idaho Falls, ID 83402  
Phone: (208) 757-5409  
[icharit@uidaho.edu](mailto:icharit@uidaho.edu) or [nuclear@uidaho.edu](mailto:nuclear@uidaho.edu)

### **Alice Allen, M.Ed.**

Director, Recruitment & Student Engagement - Idaho Falls  
1784 Science Center Drive  
Idaho Falls, ID 83402  
Phone: (208) 757-5452  
[nuclear@uidaho.edu](mailto:nuclear@uidaho.edu) or [alicew@uidaho.edu](mailto:alicew@uidaho.edu)  
[uidaho.edu/idaho-falls](http://uidaho.edu/idaho-falls)

### **Admissions:**

[uidaho.edu/admissions/graduate](http://uidaho.edu/admissions/graduate)

### **College of Graduate Studies:**

[uidaho.edu/cogs](http://uidaho.edu/cogs)

## *1.1 Educational Philosophy of the Nuclear Engineering Faculty*

The Nuclear Engineering Faculty believe that a graduate degree is more than additional course work. Adjusting from undergraduate to graduate work involves a transition in the way the student approaches studies. Graduate education is a transition period from being a student to that of a practicing engineer or researcher and to advance one's career. It is a time for the graduate student to grow intellectually and personally, create new knowledge, develop critical thinking skills, learn to work independently, and gain experience in performing research and development. Graduate studies provide the opportunity to broaden the individual's knowledge base, to obtain a depth of understanding in a chosen field, and to prepare oneself for an increasingly competitive job market. The faculty value student success and are available to assist in students' growth and development as engineers and as professionals.

The Nuclear Engineering faculty at the University of Idaho believes that it is a privilege to work and study in collaboration with leaders in the field of nuclear engineering and aims to recruit only the most capable students. Both full-time and part-time students are encouraged to apply. The U of I Nuclear Engineering program's ideal location, and partnership with, the Idaho National Laboratory (INL) creates opportunities for students to interact with the researchers at the lead nuclear research facility in the U.S. Students can work and study at the University Partnership Building (UPB) where state-of-the-art laboratory facilities are available. We believe that students are an important part of collaboration and in support of that, every effort is made to foster a world-class research and education environment.

## *1.2 Graduate Student Code of Research and Scholarly Conduct*

The University of Idaho expects that students will engage in academic activity with high standards of honesty and integrity. The academic enterprise is dependent upon such behavior. These values are central to the educational process and are also cornerstone values for citizenship and professional conduct after students leave the University. Graduate students are responsible for learning about appropriate standards for ethical research and scholarly conduct and for following all university policies related to ethical research and scholarly conduct.

The University of Idaho has specific academic honesty expectations described in the Student Code of Conduct. These are the minimum standards that are generally applied across the university. However, professors may more specifically define standards for their courses through information described in the course syllabus or other documents. Students must learn the expectations of each instructor since learning environments do vary both in content and teaching style. Sometimes the issues of academic integrity are obvious but other times a student may struggle with issues that appear to be less clear. **Talk with your instructor if you have a concern about what is expected of you.** Student Code of Conduct can be found at [uidaho.edu/student-affairs/dean-of-students/student-conduct/student-code-of-conduct](http://uidaho.edu/student-affairs/dean-of-students/student-conduct/student-code-of-conduct)

### *1.3 Nuclear Engineering Program Learning Outcomes*

In alignment with the University of Idaho Learning Outcomes, the faculty of the Nuclear Engineering Program has developed outcomes for the Master's and Doctoral degree students. Learning outcomes, both direct and indirect, assess programs and allow for continuous improvement. As such, the outcomes and assessments at each level can change from year to year in order to maintain a high standard of teaching and learning.

The outcomes for the master's and doctoral degree students are listed in Appendix C.

### *1.4 Other Expectations*

Students are expected to know and comply with U of I rules and regulations including College of Graduate Studies (CoGS), University Research Office, and College of Engineering NE Program. In addition, students are expected to make academic progress each semester. Particularly, it is important for the students to pay attention to all the communications related to deadlines.

### *1.5 Communication*

Communication is key to success as a graduate student. Communication includes Vandal Mail, Canvas, meeting with Major Professor, knowing deadlines, etc. **Students need to take ownership of making their experience a fruitful one by paying attention to the important communications sent to them, ask questions (if not clear), and ultimately understand that they are responsible for knowing and abiding by the different set deadlines for successful completion of their degree or certificate programs. No one else will be liable except themselves if they fail to meet the deadlines.**

## **2.0 ADMISSION**

Admission to the College of Graduate Studies (CoGS) is open to any student who holds a baccalaureate degree and who presents a scholastic record indicating probable success in graduate work. The General Catalog and Graduate Admission website lists the University's GPA and other admission requirements.

### *2.1 Admission with Nuclear or Mechanical Engineering Undergraduate Degree*

Admission to the Nuclear Engineering Graduate Program is open to any student who is admissible to CoGS, and if the baccalaureate degree is in mechanical or nuclear engineering from an ABET accredited U.S. program. Admission is subject to enrollment limits based on many other factors.

## 2.2 Admission with Undergraduate Degree in Non-Nuclear/Mechanical Engineering Field

Students with a baccalaureate degree from an accredited U.S. engineering program with a major other than nuclear or mechanical engineering may also be admitted to the Nuclear Engineering Graduate Program, subject to enrollment limits. However, such students must demonstrate basic proficiency in the areas of chemistry, mathematics, physics, and energy. This may require the student to include courses, in addition to the 30 credits of graduate courses required for the master's degree. These may be assigned as a part of the student's study plan as undergraduate deficiencies. The subjects included in the following list define the areas for which proficiency is expected as an **entrance** requirement.

**Energy:** Thermodynamics (Engr 3200), Fluid Mechanics (Engr 3350), Heat Transfer (ME 3450)

**Chemistry and Physics:** General Chemistry II (Chem 1120, 1120L), Modern Physics (PHYS 3050)

**Mathematics:** Numerical Methods (MATH 4280), Computer Programming Language(s)

Each applicant to the program is evaluated individually. Exceptions and/or substitutions may be made to the above requirements.

## 2.3 Admission with a Non-Engineering Undergraduate Degree

Students who do not have a U.S. engineering baccalaureate degree but are admissible to CoGS may also be admitted to the Nuclear Engineering Graduate Program. Admission is subject to enrollment limits. However, such students must demonstrate proficiency in the basic subjects included in an undergraduate engineering program. This may require the student to include courses, in addition to the 30 credits of graduate courses required for the master's degree. These are assigned as a part of the student's study plan as undergraduate deficiencies. The subjects included in the following list define the areas for which proficiency is expected as an **entrance** requirement. An appropriate combination of mathematics and basic science including:

Multivariable Calculus (Math 2750)

Ordinary Differential Equations (Math 3100)

Probability and Statistics (Stat 3010)

Chemistry (Chem 1111 & 1111L, 1120, 1120L)

Calculus based physics (Phys 2110, 2110L, 2120, 2120L, 2130)

1. Sixteen credits of humanities and social sciences including both breadth and depth.
2. Forty-eight credits of engineering topics which include engineering science and engineering design.

**Engineering science will include:**

Mechanics (Engr 2100, Engr 2200, Engr 3500)  
Thermodynamics (Engr 3200)  
Electrical Circuits (Engr 2400)  
Transport Phenomena (Engr 3350, ME 3450)

**Engineering design must include:**

- ✓ A meaningful, major engineering design experience that was built upon the fundamental concepts of mathematics
  - ✓ Basic science, humanities and social science, engineering topics and communication skills
  - ✓ A capstone design experience such as ME 4240/4260 is required
3. Appropriate laboratory experience such that the student is competent in conducting experimental work (laboratory courses are required which include an instrumentation class such as ME 3300).
  4. Appropriate computer-based experience including the computational techniques needed to solve specific engineering problems (classes such as ME 1230/2230 are required along with other courses where computers were used to solve specific engineering problems).
  5. Competence in written and oral English communication, including both English composition (e.g. ENGL 1102) and English technical writing (e.g. ENGL 3170).
  6. An understanding of the ethical, social, economic, and safety considerations in engineering practice (see engineering design under item 3 above).

The evaluation of equivalent courses will be done on an individual basis. If a student does not have the equivalent of one of the above courses (except capstone design), the student may enroll in the courses first before seeking admission.

## *2.4 International Student Admissions*

International students without a U.S. baccalaureate degree must meet university and CoGS requirements for admission, as well as program requirements listed above. Admission is subject to enrollment limits.

## *2.5 Graduate Record Examination and GPA*

Graduate Record Examination (GRE) test results are recommended but not required for applicants with an engineering baccalaureate degree from a U.S. ABET accredited program or equivalent. For all other applicants, GRE general test scores are generally required. These GRE scores and the applicant's grade point average (GPA) aid the NE program admission committee

in estimating the applicant's scholastic abilities, which are suggestive of probable success in graduate work and are helpful in counseling students in their courses of graduate study.

For more details on the exam please visit [gre.org](http://gre.org).

## 2.6 Proof of English Competency (TOEFL)

For Graduate Admission purposes, all students must meet Academic and Language Requirements. If a test score is needed, the most common and widely accepted test is the TOEFL (Test of English as a Foreign Language).

The institution code for the TOEFL is 4843.

For more information on this requirement go to [uidaho.edu/admissions/graduate/graduate-programs/nuclear-engineering](http://uidaho.edu/admissions/graduate/graduate-programs/nuclear-engineering)

\*All tests must have been taken within two years of the semester in which the student wishes to begin the program.

## 3.0 M.ENGR. DEGREE REQUIREMENTS & PROCEDURES (NON-THESIS OPTION)

A minimum of 30 credits are required for the M.Engr. (Non-Thesis) degree in Nuclear Engineering. See Curriculum Guide in Appendix E.

- At least 18 credits must be at the 5000 level.
- Up to 12 credits may be at 4000 level.
- An overall GPA of 3.0 is required for graduation. Each semester, students must earn at least a 3.0 GPA to remain in good standing.
- For further details, review College of Graduate Studies requirements.
  - Note: The 4+1 Master's Program combines the four-year Bachelors in Mechanical Engineering with a one-year Master's in Nuclear Engineering. For more information, see Appendix E.
    - College Graduate Studies webpage on the 4 + 1 program: [uidaho.edu/admissions/graduate/4-masters-program](http://uidaho.edu/admissions/graduate/4-masters-program)

The University of Idaho, Idaho Falls, maintains a Three-Year Plan for the rotation of courses. University of Idaho reserves the right to change the Three-Year Plan at any time due to enrollment requirements or other course scheduling issues.

Details on the Master's Study Plan including age of credits and transfer credits can be found on the College of Graduate Studies website under the Steps to Degree, Master's Study Plan and Degree Audit at [uidaho.edu/cogs](http://uidaho.edu/cogs) and in the catalog.

### *3.1 Program*

Students interested in the program should contact the NEIM Chair well in advance of the first registration for a tentative evaluation of educational preparation. Deficiencies in undergraduate course preparation for the graduate program will be identified.

### *3.2 Major Professor*

The student, NEIM Chair, and potential Major Professor should discuss and formalize the nomination of the Major Professor **by the end of the first semester of enrollment**. The nominated Major Professor, in conjunction with the student must submit the Appointment of Major Professor and/or Committee Form to the College of Graduate Studies.

### *3.3 Study Plan*

The Study Plan should be prepared **by the end of the second semester of enrollment**. The Major Professor, Department Chair, and College of Graduate Studies approves the study plan submitted by the student on MyUI. The Major Professor must be listed on the student's profile before the plan can be approved. Students are encouraged to create a draft prior to this. See curriculum guide in Appendix D for core courses.

### *3.4 Committee*

A supervisory committee is not required for the M.Engr. Non-Thesis Degree.

### *3.5 Capstone Requirement*

A Capstone that demonstrates mastery and application of the subject matter must be completed. Students should meet with their Major Professor to discuss options for the capstone. A comprehensive exam, paper submitted for publication, and other scholarly activities may be considered for this requirement.

Students are strongly encouraged to do a presentation of their capstone project. Students who take a comprehensive exam may be exempted from this. A rubric for the evaluation of the capstone and presentation is included in Appendix H. Students should discuss the expectations of the capstone and any related presentations prior to the last semester. Students who do a presentation need to submit an abstract for the topic to the NEIM Chair at least two weeks before the scheduled date to present. The NEIM Chair will provide this to the faculty, students, and other audience members.

After the capstone is completed, the Non-Thesis Requirement Report form is submitted by the Major Professor.

### *3.6 Application for Advanced Degree*

Students must submit an application to graduate through MyUI. See Registrar's calendar and university catalog for dates and other details at [uidaho.edu/registrar](http://uidaho.edu/registrar).

### *3.7 Information*

Further information on university and general regulations may be obtained from the University of Idaho College of Graduate Studies and the Office of the Registrar.

## **4.0 M.S. DEGREE REQUIREMENTS & PROCEDURES (THESIS OPTION)**

A minimum of 30 credits are required for the M.S. (Thesis) degree in Nuclear Engineering. See Curriculum Guide in Appendix E and Master's Planner in Appendix H.

- At least 18 credits must be at the 5000 level.
- Up to 12 credits may be at 4000 level.
- An overall GPA of 3.0 is required for graduation. Each semester, students must earn at least a 3.0 GPA to remain in good standing. For further details, review College of Graduate Studies requirements.

The University of Idaho, Idaho Falls, maintains a Three-Year Plan for the rotation of courses. University of Idaho reserves the right to change the Three-Year Plan at any time due to enrollment requirements or other course scheduling issues.

Details on the Master's Degree Study Plan including age of credits and transfer can be found on the College of Graduate Studies website under the Steps to Degree, Master's Study Plan and Degree Audit at [uidaho.edu/cogs](http://uidaho.edu/cogs) and in the catalog.

### *4.1 Program*

Students interested in the program should contact the NEIM Chair well in advance of the first registration for a tentative evaluation of educational preparation. Deficiencies in undergraduate course preparation for the graduate program will be identified. Students should review Appendix A and contact faculty with mutual research interests as well as the NEIM Chair.

### *4.2 Major Professor*

The student, NEIM Chair, and potential Major Professor should discuss and formalize the nomination of the Major Professor **by the end of the first semester of enrollment**. The nominated Major Professor in conjunction with the student must submit the Appointment of Major Professor and/or Committee Form to the College of Graduate Studies.

#### *4.3 Study Plan*

The Study Plan should be prepared **by the end of the second semester of enrollment**. The Major Professor, Department Chair, and College of Graduate Studies approves the study plan submitted by the student on MyUI. The Major Professor must be listed on the student's profile before the plan can be approved. Students are encouraged to create a draft prior to this. Faculty members on the committee are expected to have input on the study plan development. See Curriculum Guide and Master's Planner in Appendix E and Appendix H, respectively.

#### *4.4 Committee*

The Committee will be discussed by the student and the Major Professor in consultation with the NEIM Chair. The committee must include:

- ✓ Major Professor (Chair)
- ✓ At least two other committee members to provide breadth and depth to the student's program. The depth and breadth are determined by the student's administrative unit.

The Chair must be from the U of I graduate faculty. At least one other member must be from the U of I graduate faculty. A member from another institution may be approved provided they serve on the graduate faculty at their respective institution and if the NEIM department determines that they are appropriate for the student's committee. At least fifty percent (50%) of the committee members must be members of the U of I graduate faculty. See the CoGS website for more details.

#### *4.5 Thesis Proposal Meeting*

The meeting includes an oral presentation of a written thesis proposal and/or progress report to the committee. Committee members will sign and date the front page of the proposal, indicating acceptance. The proposal at a minimum need to address research objectives, timeline and issues and challenges. Any waiver to the need for a proposal meeting must be approved by the NEIM Chair. The proposal meeting is not open to the public.

#### *4.6 Application for Advanced Degree*

Students must submit an application to graduate on MyUI. See Registrar's calendar and university catalog for dates and other details at [uidaho.edu/registrar](http://uidaho.edu/registrar).

#### *4.7 Request to Proceed to Final Defense*

After detailed consultations with the Major Professor, the student provides each committee member with a copy of the thesis that will be defended. It is recommended that the committee be given three-four weeks to review the study.

Students must schedule the defense meeting with the committee members and then collect each member's signature on the Request to Proceed with Final Defense Form. The student must submit the signed form to the College of Graduate Studies prior to the defense meeting. It is recommended that the form be in the CoGS Dean's Office at least a week prior to the defense date. The entire committee must participate in the thesis defense. CoGS will send the student and Major Professor the Final Defense Report form and a Repository form with instructions on completion and deadlines for each.

#### *4.8 Thesis Defense*

The defense consists of 30-40 minutes of presentation with professional scholarly slides. After the candidate's presentation, the Major Professor will provide an opportunity to the audience members to ask questions. After that, non-committee audience members will be asked to leave the venue and questioning of the candidate by the committee will be conducted. After the questioning session, the thesis candidate will be asked to leave the room, and the committee will deliberate in a private session to determine the outcome of the defense. Upon completion of the deliberation, the candidate will be allowed back in and meet with the committee in a private session to learn about the committee's decisions on further research or edits needed for the thesis. If the defense is not acceptable to the majority of the committee, a new defense must be scheduled after the changes are made. A rubric for the evaluation of the Master's Defense is included in Appendix H. The major professor needs to fill out the MS assessment form with the help of the committee and submit it to the department chair.

Thesis presentations are open to the public including other faculty and students. Questioning by the committee is a closed session.

It is imperative that students follow the guidelines and instructions set forth for Thesis Defense. Please review the instructions and resources available on the CoGS website prior to beginning the thesis drafting to ensure compliance with all requirements.

The student who is defending the thesis must arrange for a videoconference connection that includes all faculty on the student's committee. The student must provide an abstract, copy of the thesis, date/time/location of the defense to the NEIM Chair no later than 10 business days before the defense. The NEIM Chair will provide this to the faculty, students, and other

audience members. Any exceptions to these requirements must be approved by the NEIM Chair.

Further information on university and general regulations, including required forms and Graduate Handbook for Theses and Dissertations, is available from the University of Idaho, College of Graduate Studies, and the Registrar.

#### *4.9 Pre-Defense Formatting Check and Submission of Final Thesis*

Complete instructions for formatting and submission are found in the Thesis and Dissertation Handbook. Students are required to submit the thesis for a formatting check prior to the defense. It is important to follow the instructions very carefully. Electronic Thesis submission rules (ETD) can be found on the CoGS website.

Failure to submit in the correct format or by the deadlines may result in the need to register and pay for additional credits.

### **5.0 PH.D. DEGREE REQUIREMENTS & PROCEDURES**

Doctoral students must satisfy the general requirements for the M.Engr. or M.S. degree in Nuclear Engineering (Appendix E). The additional details of the individual program for the Doctoral degree are established by each student's committee in consultation with the student. The general university guidelines require:

- A minimum of 78 credit hours beyond the bachelor's degree
- At least 52 graduate credit hours (5000 and above)
- Up to 45 credits can be 6000 - Doctoral Research and Dissertation
- At least 39 of the 78 required credits must be after admission to the U of I graduate program and be U of I courses.
- Of the 78 credits submitted to satisfy the degree requirements, a maximum of 30 credits may be more than eight (8) years old when the degree is conferred, provided the supervisory committee determines that the student has kept current in the subjects concerned.
- All other degree requirements must be completed no later than five (5) years after the date on which the candidate passed his/her preliminary examination.

Details on the Doctoral Study Plan including age of credits, limits on transfer credits, limits on thesis credits, etc. can be found on the College of Graduate Studies website under the Steps to Degree, Doctoral Study Plan and Degree Audit at [uidaho.edu/cogs](http://uidaho.edu/cogs). Two examples of the requirements are given below. One example assumes the student completed the Master's degree Thesis option and the other assumes the student completed a Non-Thesis Master's degree option.

### Completed Master's Thesis

#### **Coursework = 48 credits**

24 credits – M.S. coursework

24 credits – Ph.D. coursework

#### **Research = 30 credits**

6 credits – M.S. research & thesis

24 credits – Ph.D. research & dissertation

#### **Total Credits – 78**

### Non-Thesis Master's

#### **Coursework = 51 credits**

30 credits – M.Engr. coursework

21 credits – Ph.D. coursework

#### **Research = 27 credits**

27 credits – Ph.D. research & dissertation

#### **Total Credits – 78**

The University of Idaho, Idaho Falls, maintains a Three-Year Plan for the rotation of courses. University of Idaho reserves the right to change the Three-Year Plan at any time due to enrollment requirements or other course scheduling issues.

### *5.1 Ph.D. Program*

Students interested in the program should contact the NEIM Chair well in advance of the first registration for a tentative evaluation of educational preparation. Deficiencies in undergraduate course preparation for the graduate program will be identified. Students should review the Faculty Research Areas table (Appendix A) and contact faculty with mutual research interests as well as the NEIM Chair.

### *5.2 Major Professor*

A Major Professor will be suggested by the department faculty at the time of the admission file review if the student did not provide any name(s) of desired major professor. Matches will be based on the student's requests, academic background, and research interests as well as the research initiatives and needs of the faculty. The Major Professor **should be formally appointed during the first semester of doctoral work.**

### *5.3 Study Plan*

The study plan should be prepared **by the end of the second semester of enrollment.** The Major Professor, department chair, and College of Graduate Studies approves the study plan submitted by the student on MyUI. The Major Professor must be listed on the student's profile before the plan can be approved. Students are encouraged to create a draft prior to this. Faculty members on the committee are expected to have input on the study plan development.

### *5.4 Doctoral Committee*

The student's doctoral committee will be discussed by the student and major professor in consultation with the NEIM Chair. The Committee must include:

- ✓ Major Professor (committee chair)
- ✓ Three other committee members to provide breadth and depth to the student's program. The depth and breadth are determined by the student's administrative unit.

The chair must be a U of I graduate faculty. It is recommended that students have only four members. An outside member from another institution may be approved if the graduate faculty at that institution and if the department determines that he or she is appropriate for the student's committee. At least fifty percent (50%) of the Committee members must be members of the U of I graduate faculty. See the College of Graduate Studies (CoGS) website for details.

## 5.5 *Qualifying Examination*

The Ph.D. qualifying examination is administered twice a year (typically October and February). Students who have completed a significant amount of doctoral coursework may, after consultation with the Major Professor, request to take the exam. The NEIM Chair, in coordination with NE Program staff, announces the exam about one month prior to the exam. The students should declare their intention to take the exam via email to the NEIM chair. The amount of time from admission to exam will vary based on credit load of the student and prior academic preparation. The exam is designed to evaluate preparation for coursework and provide guidance in planning the Ph.D. program. **It primarily tests nuclear engineering knowledge expected of a student degreed from an accredited undergraduate program** as well as those courses at U of I included in the NE graduate program "core" as defined in the curriculum guide (Appendix D). The exam is administered in written form and can have an oral component.

The review committee consists of at least three persons (U of I faculty and adjunct faculty, as applicable) qualified to examine the student on **traditional nuclear engineering curricular topics** as well as at the advanced undergraduate level of achievement in the following areas and the NE graduate program core (see curriculum guide in Appendix E).

### ENERGY

1. Thermodynamics, Heat Transfer, and Fluid Mechanics
2. Course preparation
  - a) Engr 3200, ME 3450
  - b) Engr 3350 or equivalent

#### CHEMISTRY & PHYSICS

3. Principles of Chemistry and Modern Physics
4. Course preparation
  - a) CHEM 1120
  - b) PHYS 3050 or equivalent

#### MATHEMATICS

5. Numerical Methods (MATH 4280) and Computer Programming Language(s)
6. Course preparation
  - a) Math 3100
  - b) Math 2750
  - c) Additional computer and mathematics experience

The NEIM Chair, in consultation with the Major Professor, will appoint the examiner(s) in each area listed above (items one-six plus the NE graduate program “core”). The examining committee can recommend additional courses, for credit or audit, to make up for deficiencies and weaknesses demonstrated. This may necessitate a change to the study plan.

The dates for the examination are determined by the NEIM Chair. Exams dates are usually prior to the midterm of the Fall and Spring semesters.

The results of the Qualifying Examination must be communicated to the NEIM Chair from each examiner. Each student will then be formally notified of the results of his/her exam.

Students who have an earned master’s degrees in Nuclear Engineering may request that the masters be used to satisfy the qualifying exam requirement. The request is submitted to the NEIM chair via email.

### *5.6 Preliminary Examination*

When a majority of the course requirements on the study plan have been completed, a preliminary exam, oral and/or written, will be given under the direction of the student’s Major Professor. In Nuclear Engineering, the PhD Committee administers this examination with emphasis on the course work in the major area and the student’s research proposal. All committee members must participate in the examination.

If deemed necessary by the student’s committee, the student may also be required to complete an eight-hour written examination on graduate level concepts in either open or closed book form at the discretion of the supervisory committee or a two-hour oral examination may be taken. Broad areas to be covered are those listed in the study plan and any deficiencies or weaknesses determined by the qualifying exam. Upon successful completion of the exam, the student is advanced to candidacy.

### *5.7 Dissertation Proposal Meeting*

The meeting includes an oral presentation of a written dissertation proposal and/or progress report to the committee. Committee members will sign and date the front page of the proposal, indicating acceptance. The proposal at a minimum need to address research objectives, timeline, and issues and challenges.

The presentation of the doctoral proposal and the preliminary examination may, at the committee's discretion, occur at the same time and in a condensed time frame. The entire committee must participate in the dissertation proposal meeting.

The proposal meeting is not open to the public.

### *5.8 Report of Preliminary Examination & Advancement to Candidacy Form*

This form will be completed and submitted to the College of Graduate Studies by the Major Professor on completion of the exam and proposal meeting.

### *5.9 Application for Advanced Degree*

Students must submit an application to graduate on MyUI. See Registrar's calendar and university catalog for dates and other details at [uidaho.edu/registrar](http://uidaho.edu/registrar).

### *5.10 Request to Proceed to Final Defense*

After detailed consultations with the Major Professor and the committee, the candidate provides each committee member with a copy of the dissertation that will be defended. It is recommended that the committee be given four-six weeks to review the dissertation.

Students must schedule the defense meeting with the committee members and then collect each member's signature on the Request to Proceed with Final Defense Form. The student must submit the signed form to the College of Graduate Studies **ten (10) business days** prior to the defense meeting. The entire committee must participate in the dissertation defense. CoGS will send the student and Major Professor the Final Defense Report form and a Repository form with instructions on completion and deadlines for each.

### *5.11 Journal Publication Requirement for Doctoral Students*

While there is no mandatory graduation requirement for Ph.D. students in the NE Program to publish journal articles in order to receive their degrees, it is highly encouraged and expected that they publish at least three journal articles before they go for the final defense. Out of them, one journal manuscript must be reviewed or published by the time of their preliminary

examination. The major professor shall clearly communicate the expectation of journal papers at the start of their doctoral study and keep written evidence of that requirement in their record. The expectation criteria can only be relaxed with the consent of the major professor and the Ph.D. committee with concurrence from the NEIM Department Chair.

### *5.12 Doctoral Dissertation Defense*

The defense consists of 35-45 minutes of presentation with professional scholarly slides. After the candidate's presentation, the Major Professor will facilitate questioning of the candidate by the committee. The committee will then deliberate in a private session to determine the outcome of the defense. Upon completion of the deliberation, the candidate will meet with the committee in a private session to learn the committee's decisions on further research or edits needed. If the defense is not acceptable to the majority of the committee, a new defense must be scheduled after the changes are made. A rubric for the evaluation of the doctoral defense is included in Appendix G.

Dissertation presentations are required to be open to the public including other faculty and students. Questioning of the candidate by the committee is a closed session.

It is imperative that students follow the guidelines and instructions set forth for Dissertation Defense. Please review the guidelines on the CoGS website prior to beginning the dissertation to ensure compliance with all requirements.

The student who is defending the dissertation must arrange for a videoconference connection that includes all faculty on the student's committee. The student must provide an abstract, copy of the dissertation, date/time/location of the defense to the NEIM Chair no later than 10 business days before the meeting. The NEIM Chair will provide this information to the faculty, students, and other audience members. Any exceptions to these requirements must be approved by the NEIM Chair.

Further information on the university and general regulations, including required forms and Graduate Handbook for Theses and Dissertations, is available from the University of Idaho, College of Graduate Studies, and the Registrar.

### *5.13 Pre-Defense Formatting Check and Submission of Final Dissertation*

Complete instructions for formatting and submission are found in the [Thesis and Dissertation Resources](#) at the COGS website. Students are required to submit their thesis/dissertation for a formatting check prior to the defense. It is important to follow the instructions to the letter. Electronic Thesis (ETD) submission rules can be found on the ETD website.

Failure to submit in the correct format or by the respective deadlines may result in the need to register again and pay for additional credits.

## 6.0 INTERNATIONAL STUDENTS

International graduate students must carry at least nine (9) credit hours per semester to be in compliance with the rules and regulations of the U.S. Immigration Service. The University of Idaho International Programs Office is available to answer questions about this requirement.

Alice Allen  
Designated School Official, Director, Recruitment & Student Engagement - Idaho Falls  
(208) 757-5452  
[alicew@uidaho.edu](mailto:alicew@uidaho.edu)

Dana Brolley  
International Student, Scholar and Faculty Services Director  
(208) 885-8945  
888-884-3246 (toll free from within the U.S.)  
[danab@uidaho.edu](mailto:danab@uidaho.edu), [ipo@uidaho.edu](mailto:ipo@uidaho.edu)

## 7.0 GRADUATE COURSE OFFERINGS

University of Idaho (U of I) and Idaho State University (ISU) cooperate in supporting the graduate degree programs and course offerings at both institutions. U of I graduate students may enroll in ISU nuclear engineering courses for which they have met prerequisites. Students must have the approval of their Major Professor prior to enrolling in a course. Contact Student Services in Idaho Falls for instructions on enrolling.

Most courses offered at the University of Idaho in Idaho Falls are in the evening and are held in the Center for Higher Education (CHE) or the Tingey Administration Building (TAB). Courses may be offered as live, web based, hybrid, virtual, or through Engineering Outreach.

### 7.1 *Graduate Academic Certificates*

University of Idaho offers graduate academic certificates that can be added to, or completed in conjunction with, a Master's or Doctoral degree. Students in the NE program are encouraged to review the requirements for the Nuclear Criticality Safety, Nuclear Technology Management **(endorsed by International Nuclear management Academy INMA at the International Atomic Energy Agency IAEA)**, Nuclear Safeguards and Security, and Nuclear Decommissioning and Used Fuel Management certificates and discuss the applicability of each to their individual study plan with their Major Professor. Course information is listed in Appendix D. Details on the regulations for certificates as well as other certificate options are available in the general catalog, located on the Registrar's Office website.

## 8.0 RESEARCH & TEACHING ASSISTANTSHIPS

Competitive research and instructional assistantships may be available to fully admitted full-time students in good academic standing. Funding is limited and varies from semester to semester. Early application for admission is strongly recommended. After admission, contact the NEIM Chair for application details. Students must meet milestone performance expectations and make academic progress for funding to continue. If funding concludes and the student has not graduated, the student is responsible for the cost of attendance for each semester after.

Assistantships are very competitive at the University of Idaho. Assistantships can only be offered to admitted students. It is important to stay in close contact with the NEIM faculty if you have an interest in an assistantship. Graduate assistants are paid hourly for hours worked and in most cases tuition, fees, and health insurance are paid for the student as well. This compensation is intended to allow the student to maintain a basic standard of living while completing their graduate studies.

Students on assistantship must be enrolled in a minimum of nine credit hours during the Fall and Spring semesters and work 20 hours per week on their funded research project. Students who accept an assistantship are expected to enroll in a one credit seminar, INTR 5010 GRA Success Program, designed to increase success in the assistantship and degree program. Assistantships job and hours are separate from coursework and thesis/dissertation research. During the Summer session graduate assistants may be hired as temporary help and may be eligible to work up to a full 40 hours per week. Summer registration for Master's degree Research and Thesis (5000) or Doctoral Research and Dissertation (6000) is expected of all graduate students who are working on the thesis or dissertation. International students should consult with their advisor and International Programs regarding the number of credits required for summer registration.

## 9.0 University Partnership Building

The University Partnership Building is a joint research building operated by the [Idaho State University](#). [University of Idaho](#) has office and laboratory space in the building as does the Idaho National Laboratory. Headquartered in Idaho Falls, with complementary capabilities and programs at each of the participating universities, the University Partnership Building works to solve regional energy challenges that have national impact. Research, capabilities, talent, and infrastructure emphasize work in focus areas including advanced nuclear energy systems, advanced manufacturing, energy-water nexus, innovative energy systems and cybersecurity

## APPENDIX A

### NUCLEAR ENGINEERING AND RELATED PROGRAM FACULTY RESEARCH AREAS

**Charit, Indrajit, Ph.D.**, Professor and Department Chair, Nuclear Engineering & Industrial Management

(208) 757-5409, [icharit@uidaho.edu](mailto:icharit@uidaho.edu)

Nuclear materials, radiation effects, high temperature materials, microstructure-properties correlation, advanced manufacturing including additive manufacturing

**Bernards, Matthew, Ph.D.**, Associate Professor, Chemical Engineering

(208) 885-2150, [mbernards@uidaho.edu](mailto:mbernards@uidaho.edu)

Biology-material interfacial interactions, biology-material interfacial interactions, bone tissue engineering, beta-voltaic micro batteries

**Borrelli, Robert, Ph.D.**, Associate Professor, Nuclear Engineering & Industrial Management

(208) 533-8122, [rborrelli@uidaho.edu](mailto:rborrelli@uidaho.edu), @TheDoctorRAB

Safeguards-by-design, fuel cycle analysis, modeling, scientific computing, risk assessment, nuclear hybrid energy system design, fuel cask design & analysis, nuclear system data analytics, cybersecurity

**Hiramoto, Robert, Ph.D.**, Professor, Computer Science

(208) 533-8119, [hiramoto@uidaho.edu](mailto:hiramoto@uidaho.edu)

Parallel algorithms, communication protocols for UAV's, secure wireless networks

**Qiang, You, Ph.D.**, Professor of Physics

(208) 885-7558, [youqiang@uidaho.edu](mailto:youqiang@uidaho.edu)

Nanomaterials & nanotechnology for nuclear energy, advanced magnetic separation nanotechnology for spent nuclear fuel recycling, neutron radiation detection & instrumentation, nuclear radiation shielding

**Raja, Krishnan, Ph.D.**, Professor, Nuclear Engineering

(208) 757-5406, [ksraja@uidaho.edu](mailto:ksraja@uidaho.edu)

Degradation of nuclear structural materials, non-destructive materials evaluation & electrochemistry of molten salt reprocessing

**Utgikar, Vivek, Ph.D.**, Professor, Chemical Engineering

(208) 885-6970, [utgikar@uidaho.edu](mailto:utgikar@uidaho.edu)

Hydrogen & energy systems, advanced fuel cycles, energy storage

**Zhao, Haiyan, Ph.D.**, Associate Professor, Chemical Engineering

(208) 533-8123, [haiyanz@uidaho.edu](mailto:haiyanz@uidaho.edu)

Molten salts/ionic liquids, pyro processing, fuel cycle, waste form, electrochemistry, corrosion, catalysis

## APPENDIX B

### FORMS, HANDBOOKS & LINKS

Admissions-Graduate	<a href="http://uidaho.edu/admissions/graduate">uidaho.edu/admissions/graduate</a>
Canvas	<a href="http://canvas.uidaho.edu/">canvas.uidaho.edu/</a>
College of Graduate Studies (COGs)	<a href="http://uidaho.edu/cogs/">uidaho.edu/cogs/</a>
Dates and Deadlines _Registrar's Office	<a href="http://uidaho.edu/registrar/calendar">uidaho.edu/registrar/calendar</a>
Dates and Deadlines _College of Graduate Studies	<a href="http://uidaho.edu/cogs/deadlines">uidaho.edu/cogs/deadlines</a>
Electronic Thesis/Dissertations (ETD)	<a href="http://uidaho.edu/cogs/student-resources/thesis-dissertation/">uidaho.edu/cogs/student-resources/thesis-dissertation/</a>
Engineering Outreach (EO)	<a href="http://eo.uidaho.edu/">eo.uidaho.edu/</a>
General Catalog	<a href="http://uidaho.edu/registrar/catalogs">uidaho.edu/registrar/catalogs</a>
Graduate Record Exam	<a href="http://gre.org">gre.org</a>
Graduate Forms, Guides & Handbooks	<a href="http://uidaho.edu/cogs">uidaho.edu/cogs</a>
Idaho National Laboratory (INL)	<a href="http://inl.gov/">inl.gov/</a>
International Programs Office	<a href="http://uidaho.edu/academics/ipo">uidaho.edu/academics/ipo</a>
Learning Outcomes UI	<a href="http://uidaho.edu/provost/learning-outcomes">uidaho.edu/provost/learning-outcomes</a>
Registrar's Office	<a href="http://uidaho.edu/registrar">uidaho.edu/registrar</a>
UI Idaho Falls	<a href="http://uidaho.edu/idaho-falls">uidaho.edu/idaho-falls</a>
UI Idaho Falls Three Year Plan	<a href="http://uidaho.edu/idaho-falls/student-services">uidaho.edu/idaho-falls/student-services</a>
University of Idaho-Idaho Falls Class Schedule	<a href="http://uidaho.edu/idaho-falls/student-services">uidaho.edu/idaho-falls/student-services</a>
University Research Office	<a href="http://uidaho.edu/research">uidaho.edu/research</a>
TOEFL	<a href="http://ets.org/toefl">ets.org/toefl</a>
Vandal Accounts	<a href="http://vandalsetup.uidaho.edu">vandalsetup.uidaho.edu</a>
4+1 Program-College Graduate Studies	<a href="http://uidaho.edu/admissions/graduate/4-masters-program">uidaho.edu/admissions/graduate/4-masters-program</a>

## **APPENDIX C**

### **LEARNING OUTCOMES**

#### **Nuclear Engineering - M.S., M.Engr.**

- Students in the program will be able to communicate professionally and effectively in written and oral presentations to a technical audience.
- Students in the program will be able to identify and analyze engineering problems through multidisciplinary approaches as collaborative problem solvers who can synthesize and apply advanced mathematics, science, and engineering.
- Students in the program will be able to be effective nuclear engineers capable of utilizing existing research as the basis for making sound decisions to carry an engineering project through the conceptual, design and implementation phases and perform original scholarly work that considers the impact of the application of both new and existing research on society.
- Students in the program will demonstrate awareness of the global nature of the practice of nuclear engineering and be responsible for the role that they play in enhancing the quality of life of the global community while continually striving for an openness to lifelong learning.
- Students in the program will practice ethical leadership in seeking collaborative solutions and fostering respect for diversity of thought by actively participating in initiatives that add to the body of knowledge and practice and that engages the future generation of engineers.

#### **Nuclear Engineering - Ph.D.**

- Students in the program will be able to identify and analyze engineering problems through multi-disciplinary approaches as collaborative problem solvers who can synthesize and apply advanced mathematics, science, and engineering.
- Students in the program will be effective nuclear engineers capable of utilizing existing research as the basis for making sound decisions to carry an engineering project from through the conceptual, design and implementation phases and perform original scholarly work that considers the impact of the application of both new and existing research on society.
- Students in the program will communicate professionally and effectively in written and oral presentations to a technical audience.
- Students in the program will demonstrate awareness of the global nature of the practice of nuclear engineering and be responsible for the role that they play in enhancing the quality of life of the global community while continually striving for an openness to lifelong learning.
- Students in the program will practice ethical leadership in seeking collaborative solutions and fostering respect for diversity by actively participating in initiatives that add to the body of knowledge and practice and engage the future generation of engineers.

## **APPENDIX D**

### **ACADEMIC CERTIFICATES**

A grade of B or higher is required in all coursework for academic certificates. Review the information in the general catalog (O-10-b) for other regulations.

#### **Nuclear Criticality Safety**

- NE 4500 Principles of Nuclear Engineering
- NE 5350 Nuclear Criticality Safety
- NE 5550 Nuclear Criticality Safety II
- One of the following:
  - NE 5540 Radiation Detection and Shielding
  - Upper-Division or Graduate level Mathematics course

#### **Nuclear Decommissioning and Used Fuel Management**

Before pursuing this certificate, students must have completed NE 4500 Principles of Nuclear Engineering or have previous professional nuclear experience such as nuclear navy or a commercial power plant.

- NE 5140 Nuclear Safety
- NE 5160 Nuclear Rules and Regulations
- NE 5540 Radiation Detection and Shielding
- NE 5870 Nuclear Decommissioning

#### **Nuclear Safeguards and Security**

- NE 5130 Nuclear Security Science (U of I)
- PUBADM 555 Security Regulation & Policy for Nuclear, Radiation & Cyber-related Risk (BSU)
- CS 581 Cyber Security for the Nuclear Industry (BSU)
- NE 5588 Nonproliferation and Safeguards (ISU)

#### **Nuclear Technology Management**

- INDT 4340 Power Generation and Distribution
- NE 5270 Nuclear Material Storage, Transportation and Disposal
- NE 5280 Management of Nuclear Facilities
- NE 5140 Nuclear Safety
- NE 5160 Nuclear Rules and Regulations
  - TM 5200 Leadership and Conflict Resolution in a Technological Environment

## APPENDIX E CURRICULUM GUIDE

Master's student, thesis and non-thesis, must complete core, electives and research courses. Doctoral students must complete any of the core courses that were not part of their master's degree, electives and research courses.

### CORE COURSES: 18 credits

Foundational	NE 4500 Principles of Nuclear Engineering*
Thermal Hydraulics	NE 5200 Thermodynamics of Nuclear Power Plants
Materials	NE 5380 Fundamentals of Nuclear Materials
Neutronics	NE 5440 Reactor Analysis - Statics and Kinetics
Radiation Protection	NE 5540 Radiation Detection and Shielding
Fuel Cycles	NE 5850 Nuclear Fuel Cycles

\*Students with a bachelor's degree in NE may request a waiver of this course. If a waiver is granted, students must take an additional elective.

### ELECTIVES:

- Non-thesis (M.Engr.) option
  - 12 credits (minimum) of elective coursework, including an option of using a maximum of 3 credits of non-thesis research (NE 5990) to meet the non-thesis requirement.
- Thesis (M.S.) option
  - 6 credits (minimum) of NE 5000 thesis master's research credits in a focused area up to a maximum of 9 credits.

### 4+1 NUCLEAR ENGINEERING (NE): M.ENGR. DEGREE CURRICULUM\*

\*Only available to U of I Mechanical Engineering senior undergraduates or juniors with permission.

- Senior Year (Fall): 6 credits toward M.Engr.
  - NE 4500 Principles of Nuclear Engineering (ME-approved tech elective for BS-ME), 3 cr.
  - Graduate credit reservation: NE 5380 Fundamentals of Nuclear Materials, 3 cr.
- Senior Year (Spring): 6 credits toward M.Engr.
  - Any NE elective or ME-approved tech elective in student's area of interest/MP approved, 3 cr.
  - Graduate credit reservation: NE 5540 Radiation Detection and Shielding, 3 cr.
- Master's Year (Fall): 9 credits
  - NE 5200 Thermodynamics of Nuclear Power Plants, 3 cr.
  - NE 5000 level elective in student's area of interest/MP approved, 3 cr.
  - NE 5850 Fuel Cycles, 3 cr.
- Master's Year (Spring): 9 credits

- NE 5440 Reactor Kinetics: Statics and Dynamics, 3 cr.
- NE 5990 Non-thesis Master's Project, 3 cr.
- NE 5000 level elective in student's area of interest/MP approved, 3 cr.
- Total: 30 credits

## APPENDIX F MASTER'S PLANNER

\* More details on deadlines at: [uidaho.edu/cogs/deadlines/thesis-dissertations](http://uidaho.edu/cogs/deadlines/thesis-dissertations)

Completed	Course	Category	Credits
	NE 4500 Principles of Nuclear Engineering	Core	3
	NE 5200 Thermodynamics of Nuclear Power Plants	Core	3
	NE 5380 Fundamentals of Nuclear Materials	Core	3
	NE 5440 Reactor Analysis - Statics and Kinetics	Core	3
	NE 5540 Radiation Detection and Shielding	Core	3
	NE 5850 Nuclear Fuel Cycles	Core	3
	Master's Focus	Electives	Variable*
	NE 5000/5990 Master's Research (NE 5000: 6 to 9 crs. / NE 5990: 1-3 crs.)	Research	Variable*
		Total:	30

\* For details on variable credits, refer to the previous page.

Thesis Option (M.S.)	Non-Thesis Option (M.Engr.)	Item	Semester
X	X	Admission to University of Idaho	
X	X	Appointment of Major Professor	By the end of the first semester
X		Appointment of Committee	By the end of the second semester
X	X	Study Plan	By the end of the second semester
X		Proposal Defense	Determined by the thesis committee
X	X	Application to Graduate	Check COGS deadline*
	X	Project Presentation	Determined by the major professor or NE 5990 instructor
X		Request to Proceed with Final Defense	At least two weeks before the final defense date
X		Final Defense	Determined by the thesis committee and the COGS graduation deadline
X		Thesis Submission	COGS deadline
X	X	Annual Progress Review	Major Professor and if applicable, by the Dept. Chair

***Examples of graduate student productivity***

<b>Publications</b>	<b>Title</b>	<b>Journal</b>	<b>Date</b>
<b>Presentations and Posters</b>	<b>Title</b>	<b>Location</b>	<b>Date</b>
<b>Scholarships</b>	<b>Name</b>	<b>Amount</b>	<b>Date</b>
<b>Funding</b>	<b>Name/Agency</b>	<b>Amount</b>	<b>Date</b>
<b>Internships</b>	<b>Title</b>	<b>Location</b>	<b>Date</b>
<b>Volunteer Activities</b>	<b>Event</b>	<b>Sponsor</b>	<b>Date</b>
<b>Professional Organizations</b>	<b>Organizational Name</b>		<b>Date</b>
<b>Awards</b>	<b>Title</b>	<b>Sponsor</b>	<b>Date</b>

**APPENDIX G**  
**DOCTORAL PLANNER**

Item	Semester Completed
Admission to University of Idaho	
Appointment of Major Professor	
Appointment of Committee Member 1	
Appointment of Committee Member 2	
Appointment of Committee Member 3	
Qualifying Exam	
Study Plan	
Preliminary Exam	
Proposal Defense	
Advancement to Candidacy	
Application to Graduate	
Request to Proceed to with Final Defense	
Final Defense	
Submission of Dissertation	
Annual Progress Review	

Completed	Title	Category	Credits
	NE 4500 Principles of Nuclear Engineering	Core	3
	NE 5200 Thermodynamics of Nuclear Power Plants	Core	3
	NE 5380 Fundamentals of Nuclear Materials	Core	3
	NE 5440 Reactor Analysis – Statics and Kinetics	Core	3
	NE 5540 Radiation Detection and Shielding	Core	3
	NE 5850 Nuclear Fuel Cycles	Core	3
	Master’s Focus	Elective	3
	Master’s Focus	Elective	3
	Master’s Focus	Elective	3
	Doctoral Focus	Elective	3
	Doctoral Focus	Elective	3
	Doctoral Focus	Elective	3
	Doctoral Focus	Elective	3
	Doctoral Focus	Elective	3
	Doctoral Focus	Elective	3
	Additional Doctoral Coursework		
	NE 6000 Doctoral Research & Dissertation	Research	45 (max.)
	Total		78 (min.)

<b>Publications</b>	<b>Title</b>	<b>Journal</b>	<b>Date</b>
<b>Presentations and Posters</b>	<b>Title</b>	<b>Location</b>	<b>Date</b>
<b>Scholarships</b>	<b>Name</b>	<b>Amount</b>	<b>Date</b>
<b>Funding</b>	<b>Name/Agency</b>	<b>Amount</b>	<b>Date</b>
<b>Internships</b>	<b>Title</b>	<b>Location</b>	<b>Date</b>
<b>Volunteer Activities</b>	<b>Event</b>	<b>Sponsor</b>	<b>Date</b>
<b>Professional Organizations</b>	<b>Organizational Name</b>		<b>Date</b>
<b>Awards</b>	<b>Title</b>	<b>Sponsor</b>	<b>Date</b>

# APPENDIX H

## M. Engr. Nuclear Engineering Project Evaluation Form

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Student

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Date

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Evaluator

Evaluator instructions: Please complete the **Project Evaluation Rubric** below. The communication section refers to either written reports or oral presentations.

<b>Project Evaluation Rubric</b> <i>(check one box in each row)</i>			<b>4</b> Excellent	<b>3</b> Good	<b>2</b> Satisfactory	<b>1</b> Needs Improvement
<b>CONTENT</b>	<b>Research</b>	Historical and modern approaches to problems found and considered.				
	<b>Methods</b>	Engineering analysis and/or experimental approaches applied.				
	<b>Results and/or Deliverables</b>	Delivered solutions, analysis, and/or deliverables.				
<b>DELIVERY</b>	<b>Organization</b>	Logically ordered for intended purpose with effective transitions between topics, sections and chapters.				
	<b>Visual Aids</b>	Graphics and/or figures as tools for communicating project concepts.				
	<b>Style</b>	Language and style conveys meaning to audience.				

**MS and PhD Nuclear Engineering Defense Presentation and Thesis /Dissertation Evaluation Form**

\_\_\_\_\_  
Student

\_\_\_\_\_  
Date

\_\_\_\_\_  
Evaluator

Evaluator instructions: Please complete the **Defense Presentation Evaluation Rubric** below and the **Thesis/Dissertation Evaluation Rubric** on the following page.

<b>Defense Presentation Evaluation Rubric</b> <i>(check one box in each row)</i>			<b>4</b> Excellent	<b>3</b> Good	<b>2</b> Satisfactory	<b>1</b> Needs Improvement
<b>CONTENT</b>	<b>Research</b>	Historical and modern approaches to problems found and considered.				
	<b>Methods</b>	Engineering analysis and/or experimental approaches applied.				
	<b>Results and/or Deliverables</b>	Delivered solutions, analysis, and/or deliverables.				
<b>DELIVERY</b>	<b>Organization</b>	Logically ordered for intended purpose with effective transitions between topics, sections and chapters.				
	<b>Visual Aids</b>	Graphics and/or figures as tools for communicating project concepts.				
	<b>Style</b>	Language and style conveys meaning to audience.				

**Thesis/Dissertation Evaluation Rubric**  
*(check one box in each row)*

		<b>4</b> Excellent	<b>3</b> Good	<b>2</b> Satisfactory	<b>1</b> Needs Improvement
<b>CONTENT</b>	<b>Originality</b>	Original treatment of, or new perspective on, the topic.			
	<b>Research Approach</b>	Research approach builds on previously published work, combining effective methods with the novel and/or modern approaches.			
	<b>Results</b>	Data collection and assessment results are clear and logical, supporting the goals of the thesis/dissertation.			
	<b>Scholarship</b>	Content reviews and builds on appropriate prior work.			
	<b>Relevance</b>	The thesis/dissertation conveys the significance of its contribution.			
<b>FOCUS</b>	<b>Goals</b>	The goals are developed and explicitly stated.			
	<b>Order</b>	The order in which ideas are presented is clear, logical, and effective.			
	<b>Conclusions</b>	The conclusions are supported by the data.			
<b>LANGUAGE</b>	<b>Style</b>	The thesis/dissertation is clear, concise, consistent, and is easy to read and understand.			
	<b>Mechanics</b>	The writing is absent of grammar and/or spelling errors.			