GRADUATE STUDENT HANDBOOK

NUCLEAR ENGINEERING
PROGRAM

Updated
Summer 2009

University of Idaho
College of Engineering

This information supplements the general information in the current University of Idaho General Catalog. A summary of the University requirements for graduate degrees can be found at http://www.uidaho.edu/catalog/

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Undergraduate Preparation for Graduate Students in Nuclear Engineering

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 lists the University's GPA admission requirements. Admission to the Nuclear Engineering Graduate Program is open to any student who is admissible to COGS if his or her baccalaureate degree is with a major in engineering from an A.B.E.T. accredited U.S. program.

Students with a B.S. degree from an accredited U.S. engineering program with a major other than nuclear engineering may also be admitted to the Nuclear Engineering Graduate Program. However, such students must demonstrate a basic proficiency in the areas of chemistry, mathematics, physics and energy. This generally requires 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.

a. Energy: Thermodynamics (Engr 320), Fluid Dynamics (Engr 335), and Heat Transfer (ME 345)
b. Chemistry and Physics: Principles of Chemistry II (Chem 112), and Modern Physics (PHYS 305)
c. Mathematics, Numerical Methods and Computer Programming Language(s)

Each applicant to the program is evaluated individually and may lead to exceptions and/or substitutions to the above requirements.

Students who do not have a B.S. degree from an accredited U.S. engineering program may also be admitted to the Nuclear Engineering Graduate Program. However, such students must demonstrate a proficiency in the basic subjects included in an undergraduate engineering program. This requires the student to include courses, in addition to the 30 credits of graduate courses required for the Master's degree, which 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.

a. An appropriate combination of mathematics and basic science including multivariable calculus (Math 275), ordinary differential equations (Math 310), probability and statistics (Stat 301), chemistry (Chem 111), and calculus based physics (Phys 211, 212, 213).

b. Sixteen credits of humanities and social sciences including both breadth and depth.

c. Forty-eight credits of engineering topics which include engineering science and engineering design. Engineering science will include mechanics (Engr

210, Engr 220, Engr 350), thermodynamics (Engr 320), electrical circuits (Engr 240), materials science (MSE 201), and transport phenomena (Engr 335, ME 345). 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 424/426 is required).

d. Appropriate laboratory experience such that the student is competent to conduct experimental work (laboratory classes are required which include an instrumentation class such as ME 330).

e. Appropriate computer-based experience including the computational techniques needed to solve specific engineering problems (classes such as ME 123/223 are required along with other classes where computers were used to solve specific engineering problems).

f. Competence in written and oral English communication. This requires both English composition (like Eng 102) and English technical writing (like Eng 317).

g. An understanding of the ethical, social, economic, and safety considerations in engineering practice (see engineering design under item c above).

The evaluation of equivalent classes will be done on an individual basis. If a student does not have the equivalent of one of the above classes (except capstone design), the student may take the class or challenge it (see procedures for challenge process in UI General Catalog) after appropriate self-study.

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. For all other applicants, GRE general test results are required (the engineering subject test is no longer available). These GRE scores and the applicant's grade point average (gpa) aid the faculty 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. The GRE areas of interest and expected minimum scores are as follows:

Area	Suggested Scaled Score	Engineering Approximate Percentile Rank
GENERAL TEST:		
Verbal (Reading Comprehension)	470	50th
Quantitative (Basic Math and Problem Solving Skills)	680	50th
Analytical Writing (critical thinking and writing)	4.0	50th

Explanation of the Analytical Writing score is listed below.

SCORE 6 - a cogent, well-articulated analysis of the complexities of the issue and conveys meaning skillfully.
SCORE 5 - presents a generally thoughtful, well-developed analysis of the complexities of the issue and conveys meaning clearly.
SCORE 4 - presents a competent analysis of the issue and conveys meaning adequately.
SCORE 3 - demonstrates some competence in its analysis of the issue and in conveying meaning but is obviously flawed.
SCORE 2 - paper demonstrates serious weaknesses in analytical writing.
SCORE 1 - demonstrates fundamental deficiencies in analytical writing skills.
SCORE 0 - off topic, in a foreign language, merely copies the topic, consists of only keystroke characters, or is illegible, blank, or nonverbal.

English Requirements for Students Who's Primary Language is NOT English

The results of the Test of English as a Foreign Language (TOEFL) are required for all students whose primary language is not English, and are used as a measure of the student's skills in these areas:

Area	Paper Based Minimum Score	Internet Based Minimum Score
Listening	54	21
Structure/Writing	54	21
Reading	54	21
Speaking	N/A	21
Totals	550	84

A part of the TOEFL paper-based test also reports an essay rating, the Test of Written English (TWE). This writing test provides information about an examinee's ability to generate and organize ideas on paper, support those ideas with evidence or examples, and use the conventions of standard written English. A minimum 70th percentile score of 4.2 is recommended. Explanation of the scores follows:

6 Effectively addresses the writing task, is well organized and well developed, uses clearly appropriate details to support a thesis or illustrate ideas, displays consistent facility in the use of language, demonstrates syntactic variety and appropriate word choice.

5 May address some parts of the task more effectively than others, is generally well organized and developed, uses details to support or illustrate an idea, displays facility in the use of the language, demonstrates some syntactic variety and range of vocabulary.

4 May address some parts of the task more effectively than others, is generally well organized and developed, uses details to support a thesis or illustrate an idea, displays facility in the use of the language, demonstrates some syntactic variety and range of vocabulary.

3 Inadequate organization or development, inappropriate or insufficient details to support or illustrate generalizations, a noticeably inappropriate choice of words or word forms, an accumulation of errors in sentence structure and/or usage

2 Serious disorganization or underdevelopment, little or no detail or irrelevant specifics, serious and frequent errors in sentence structure or usage, serious problems with focus.

1 May be incoherent, undeveloped, and may contain severe and persistent writing errors.

International Students

International students must carry nine (9) credit hours per semester to be in compliance with the rules and regulations of the U.S. Immigration Service. Exceptions to this requirement permitted by the Immigration Service are:

1. when a student is in his/her final semester and does not need full credit to graduate;
2. for medical reasons, which requires verification from a doctor;
3. for graduate students who have completed all course work and have only thesis or dissertation work remaining.

Degree Requirements for M.S. and M.E. Degrees

Thirty credits are required for the M.S. degree and M.E. degrees in Nuclear Engineering. At least 18 credits (including thesis for M.S.) must be at the 500 level. No credits may be at the 300 level or lower. In addition, no classes required for the undergraduate degree can be used as part of the graduate program. This restriction does not include technical elective classes.

The classes in each of these sub-areas are listed on the Nuclear Engineering Three Year Plan. This can be accessed at:

http://www.if.uidaho.edu/docs/Three_Year_Plan.pdf

The combined total of transfer credits, correspondence credits, non-matriculated credits, and approved credits more than eight years old at the time the degree is awarded shall not exceed 12 credits for master's programs.

Credits earned at an institution that does not grant graduate degrees cannot be transferred to University of Idaho for graduate credit.

All other credits submitted to meet the requirements for a Master's degree must have been earned within the eight consecutive years immediately preceding the academic session in which the degree is completed. Course of Study Guides for the two degrees follow.

Course of Study Guide for the M.Engr. Degree (30 Credits)

Core – 12 hours (*All classes are 3 credit hours unless noted*)

NE 460	Nuclear Reactor Engineering
NE 501	Seminar (1 cr., 2 cr. are required)
NE 544	Reactor Analysis (statics and kinetics)
NE 554/Phys 506	Radiation Detection and Shielding (ISU NSEN 608/609)
NE 565	Reactor Engineering (ISU NSEN 605)
NE 585	Nuclear Fuel Cycles (ISU NSEN g444)
Math 480	Partial Differential Equations (or other advanced Math and/or computer Modeling courses)
(ISU)NSEN 447	Nuclear Systems Laboratory (ISU)

Focus Areas

- Reactor Engineering, Control & Safety Focus
  - CHE/ME 527 Thermodynamics
  - CE/ME 519 Fluid Transients
  - CE 541/ME 583 Reliability of Engineering Systems
  - ChE/ME 541 Advanced Engineering Analysis
  - CS 430 System Modeling and Simulation
  - ECE 470/ME 481 Control Systems
  - ME 435 Thermal Energy System Design
  - ME 477/577 Design for Manufacture Assembly
  - ME 520/CHE 537 Fluid Dynamics
  - ME 546 Convective Heat Transfer
  - ME/ChE 525 Advanced Heat Transfer
  - NE 462 Nuclear Reactor Codes and Standards
  - NE 525 Transport Theory
  - NE 530 Two Phase Flow (ISU NSEN 625)
  - NE 575 Advanced Nuclear Power Engineering (ISU NSEN 615)

- Reactor Fuels, Chemical Engineering & Chemistry, and Materials Focus
  - ChE 423 (Chemical) Reactor Kinetics and Design
  - ChE 480/580 Engineering Risk Assessment Hazardous/Radioactive Waste
  - ChE 529 Chemical Engineering Kinetics
  - ChE/ME 515 Transport Phenomena
  - ChE/Me 528 Advanced Thermodynamics
  - MSE 415 Materials Selection and Design
  - MSE 423/523 Corrosion
  - MSE 428/528 Advanced Engineering Ceramics
  - MSE 534 Radiation Effects in Materials
  - MSE/ME 535 Failure of Structural Materials
  - MSE 550 Nuclear Reactor Fuels
  - NE 570 Nuclear Chemical Engineering
  - NE 580 Waste Management and Nuclear Fuel Reprocessing
  - NE 581 Treatment of Radioactive Wastes (ISU NSEN 618/619)
  - NE 582 Spent Nuclear Fuel Management and Disposition

Advanced Math, Science, or Engineering courses may be used as technical electives with approval of the student's committee. This degree is a minimum of 36 semester hours. Students may transfer in a maximum of 12 graduate hours completed at other accredited universities.

Course of Study Guide for the M.S. Degree (30 Credits)

Core – 12 hours (*All classes are 3 credit hours unless noted*)

NE 460	Nuclear Reactor Engineering
NE 501	Seminar (1 cr., 2 cr. are required)
NE 544	Reactor Analysis (statics and kinetics)
NE 554/Phys 506	Radiation Detection and Shielding (ISU NSEN 608/609)
NE 565	Reactor Engineering (ISU NSEN 605)
NE 585	Nuclear Fuel Cycles (ISU NSEN g444)
Math 480	Partial Differential Equations (or other advanced Math and/or computer Modeling courses)
(ISU)NSEN 447	Nuclear Systems Laboratory (ISU)

Focus Areas

- Reactor Engineering, Control & Safety Focus
  - CHE/ME 527 Thermodynamics
  - CE/ME 519 Fluid Transients
  - CE 541/ME 583 Reliability of Engineering Systems
  - ChE/ME 541 Advanced Engineering Analysis
  - CS 430 System Modeling and Simulation
  - ECE 470/ME 481 Control Systems
  - ME 435 Thermal Energy System Design
  - ME 477/577 Design for Manufacture Assembly
  - ME 520/CHE 537 Fluid Dynamics
  - ME 546 Convective Heat Transfer
  - ME/ChE 525 Advanced Heat Transfer
  - NE 462 Nuclear Reactor Codes and Standards
  - NE 525 Transport Theory
  - NE 530 Two Phase Flow (ISU NSEN 625)
  - NE 575 Advanced Nuclear Power Engineering (ISU NSEN 615)

- Reactor Fuels, Chemical Engineering & Chemistry, and Materials Focus
  - ChE 423 (Chemical) Reactor Kinetics and Design
  - ChE 480/580 Engineering Risk Assessment Hazardous/Radioactive Waste
  - ChE 529 Chemical Engineering Kinetics
  - ChE/ME 515 Transport Phenomena
  - ChE/Me 528 Advanced Thermodynamics
  - MSE 415 Materials Selection and Design
  - MSE 423/523 Corrosion
  - MSE 428/528 Advanced Engineering Ceramics
  - MSE 534 Radiation Effects in Materials
  - MSE/ME 535 Failure of Structural Materials
  - MSE 550 Nuclear Reactor Fuels
  - NE 570 Nuclear Chemical Engineering
  - NE 580 Waste Management and Nuclear Fuel Reprocessing
  - NE 581 Treatment of Radioactive Wastes (ISU NSEN 618/619)
  - NE 582 Spent Nuclear Fuel Management and Disposition

Thesis – 6 hours

- NE 500 Masters Research and Thesis

Advanced Math, Science, or Engineering courses may be used as technical electives with approval of the student's committee. This degree is a minimum of 30 semester hours. Students may transfer in a maximum of 12 graduate hours completed at other accredited universities.

Degree Requirements for the Ph.D. Degree

The applicant must satisfy our requirements for the M.E.N.E. or M.S.N.E. degree. The additional details of the individual program for the Doctoral degree are established by the Supervisory Committee in consultation with the student. The general university guidelines require:

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1. A minimum of 78 credits beyond the Bachelor's degree;
2. At least 52 credits in courses numbered 500 and above;
3. At least 39 of the 78 credits must be in courses other than 600 (Doctoral Research and Dissertation).
4. At least 39 of the 78 required credits must be UI courses.

The Nuclear Engineering Program requires that at least one-third of the credits beyond the Bachelor's degree be in research (26 credits).

Two examples of the requirements are given below. One example assumes the student completed a Master's thesis and the other assumes the student did not.

	Did Master's Thesis		Did Not Do Master's Thesis
	24 credits - M.S. course work		30 credits - M.S. course work
	24 credits - Ph.D. course work		21 credits - Ph.D. course work
Total	48 credits - course work	Total	51 credits - course work
	24 credits - Ph.D. research & dissertation		27 credits - Ph.D. research & dissertation
	6 credits - M.S. research & thesis		
	30 credits - research		
Total	78 credits	Total	78 credits

The department also requires that of the total course work, at least one-half of the credits beyond the Bachelor's degree be in N.E. related 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.

Graduate Course Offerings

The Departments at the University of Idaho (UI) and at Idaho State University (ISU) cooperate in supporting each other's graduate programs. Graduate students at either institution may register at their institution to take classes at the other institution.

A plan for course delivery at the Idaho Falls Center can be accessed at the following web address:

http://www.if.uidaho.edu/docs/Three_Year_Plan.pdf

Procedures for Candidates for M.E. Degrees

1. Students interested in the program should contact the program director 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.

2. **Nomination of Major Professor**: The student, program director, and potential major professor must concur on the nomination of the major professor before the student has completed three classes. 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. **Committee**: A supervisory committee is not required for the MEME degree.

4. **Study Plan**: The Study Plan, filled out in consultation with the Major Professor, must be prepared by the time three classes are completed. Only those courses needed to complete the degree are listed on the plan. After approval by the Program Director, the plan is sent to the College of Graduate Studies. Awarding of the degree is contingent upon the completion of the Study Plan.

5. **Comprehensive Examination**: The final comprehensive examination is administered and scheduled by the major professor. The program director will appoint additional members to an Examining Committee. The oral examination will take place, at the completion of the oral examination it may then be decided that an additional written examination is required at a later date. The awarding of the degree is also contingent upon passing the comprehensive examination. Students are encouraged to seek additional information from the Examining Committee on any information that might help the student properly prepare for the examination.

   The Application for Advanced Degree form is completed on-line at the beginning of the semester in which the student intends to graduate. After the examination, the Non-Thesis Requirement Report must be completed and submitted to the College of Graduate Studies.

6. Further information on university and general regulations may be obtained from the University of Idaho College of Graduate Studies at www.uidaho.edu/cogs/ and the Registrar at www.uidaho.edu/registrar/forms.html (Appendix B).

Procedures for Candidates for M.S. Degree

1. Students interested in the program should contact the program director 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.

2. **Major Professor**: The student, program director and potential major professor must concur on the nomination of the major professor before three classes are completed. The major professor nominated in conjunction with the student must submit the Appointment of Major Professor and/or Committee form to the College of Graduate Studies.

3. **Committee**: The Supervisory Committee will be nominated by the major professor consulting with the student and the program director. The Supervisory Committee must include:
    a. The major professor as chairperson.
    b. An additional member from the Nuclear Engineering Program.
    c. One member from another department.

    All of these committee members must be UI faculty members or affiliate UI faculty members. Additional members may be appointed if desired. At least fifty percent (50%) of the committee members must be members of the graduate faculty.

4. **Study Plan:** The Study Plan must be prepared before three classes are completed. The Supervisory Committee, the Program Director, and the Dean of the College of Graduate Studies approve it. The awarding of the degree is contingent upon the completion of the Study Plan.

5. **Comprehensive Examination**: The final comprehensive examination is administered and scheduled by the major professor. All Supervisory Committee members must be present at this examination. An announcement of the defense, needs to be prepared and posted several days prior to the defense. This announcement includes; title, abstract, presenter, day, time, and location.

    The first hour of the examination is to be used by the student to present his/her thesis. Following a ten-minute break, an oral examination will be given to the student on course work and/or matters related to the student's thesis. At the completion of this oral examination, it will be decided if an additional written examination will be required at a later date.

    The Request to Proceed to Final Defense must be submitted to the College

of Graduate Studies at the beginning of the semester in which the student intends to graduate. The student will receive the Report of Final Defense that must be signed by the student's committee after the defense and submitted to the College of Graduate Studies by the major professor.

A copy of the title page of the thesis must be attached to the Report of Final Defense form, and the completed thesis submitted within 6 months.

6. Submission of the Thesis: Complete instructions for format and submission are found in the Graduate Handbook for Theses and Dissertations (www.uidaho.edu/cogs/). It is important to follow the instructions to the letter.

7. In addition to the two copies of the thesis required by the College of Graduate Studies, one unbound copy with a completed signature page is required by the Nuclear Engineering Progam. It is wise to have extra signature pages completed.

   The Application for Advanced Degree form, found on the Registrar website at http://www.students.uidaho.edu/default.aspx?pid=19797 should be completed on-line when you are within one semester of completing your requirements.

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 at www.uidaho.edu/cogs/ and the Registrar at www.uidaho.edu/registrar/forms.html (Appendix B).

Procedures for Candidates for Ph.D. Degree

1. Students interested in the program should contact the program director 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.

2. **Major Professor**: The student, program director and potential major professor must concur on the nomination of the major professor at the time of admission. The major professor nominated in conjunction with the student must submit the Appointment of Major Professor and/or Committee form to the College of Graduate Studies.

3. **Qualifying Examination**: The Ph.D. qualifying examination, administered within the first year and before completion of the bulk of course work, is designed to evaluate preparation of doctoral coursework, and provide guidance in planning the Ph.D. program. This committee will consist of at least three persons (UI faculty or affiliate faculty) qualified to examine the student at the advanced undergraduate level of achievement in the following areas:

   a. Energy - Thermodynamics, Heat Transfer, and Fluid Mechanics. (Course preparation*: Engr 320, ME 345, and Engr 335 or equivalent).

   b. Chemistry and Physics - Principles of Chemistry and Modern Physics (Course preparation*: CHEM 112, and PHYS 305 or equivalent).

   c. Mathematics, Numerical Methods and Computer Programming Language(s). (Course preparation*: Math 310, Math 275 and additional computer and mathematics experience).

   The program director in consultation with the major professor will appoint the examiner(s) in each area. The student may, at the discretion of the examining committee, be exempted from the written part of the examination because of exemplary performance on the oral portion.

   The dates for the Oral Examination are to be arranged with the Nuclear Engineering Program Director.

The results of the Qualifying Examination must be communicated to the Program Director in a memo from the chair of the examination committee.

4. **Committee**: The Supervisory Committee will be nominated by the major professor consulting with the student and the program director. The Supervisory Committee must include:
    a. The major professor as chairperson who is a full member of the UI graduate faculty.
    b. An additional member from the major field.
    c. One member from a supporting field.
    d. One member from outside the major field.

    All of these committee members must be UI faculty members or affiliate UI faculty members. Additional members may be appointed if needed. At least fifty percent (50%) of the committee members must be members of the graduate faculty.

5. **Study Plan**: The Study Plan must be prepared soon after the completion of the Qualifying Examination. The Supervisory Committee, the Program Director, and the Dean of the College of Graduate Studies approve it. The awarding of the degree is contingent upon the completion of the Study Plan.
    The study plan is just a plan; courses can be dropped and added on a Change of Study Plan.

6. **Preliminary Examination**: When a majority of the course requirements on the study plan have been completed, a preliminary exam, written and oral, will be given under the direction of the student's major professor. In Nuclear Engineering, the Supervisory Committee administers this examination with emphasis on the course work in the major area. All committee members must be present at this examination.

    The student will be expected to complete an 8 hour written examination on graduate level concepts in either open or closed book form at the discretion of the supervisory committee. This examination is usually scheduled in 2 four hour sessions on successive days.

    A 2 hour oral examination will follow the written examination at a later date. Broad areas to be covered are those listed in the study plan. Upon successful completion of the exam, the student is advanced to candidacy.

    Dissertation Proposal: The examination includes presentation of a written dissertation proposal and/or progress report to the supervisory committee. Committee members will sign and date the front page of the proposal, indicating acceptance. Upon successful completion of the Preliminary Examination, the student is advanced to candidacy.

Report of Preliminary Examination and Advancement to Candidacy form: Obtained from the COGS websire (http://www.grad.uidaho.edu/default.aspx?pid=32490), this form must be filled out and submitted to the College of Graduate Studies on completion of the exam and presentation.

7. **Final Ph.D. Examination**: The final Ph.D. Examination may be taken no earlier than five months after advancement to candidacy. Ten days prior to the examination a near final copy of the dissertation must be submitted to each Supervisory Committee member. All committee members must be present at this examination.

   Request to Proceed to Final Defense: This form must be submitted to the College of Graduate Studies at the beginning of the semester in which the student intends to graduate. The student will receive the Report of Final Defense that must be signed by the student's committee after the defense and submitted to the College of Graduate Studies.

8. **Doctoral Dissertation Defense**: At the conclusion of the candidate's research project, a date is arranged with the supervisory committee for the student to defend his/her dissertation. Two weeks before the chosen date, the dissertation defense must be announced on a simple poster with the candidate's name and that of the major professor; the date, time and location of the defense; the dissertation topic and a short narrative of the subject matter.

   A draft of the dissertation is submitted to members of the supervisory committee at least one week prior to the date of the defense. The defense consists of a one-hour presentation followed by 30 minutes of questions. After deliberation, the supervisory committee may require further research or edits to the dissertation.

9. **Submitting the final dissertation**: Complete instructions for format and submission are found in the Graduate Handbook for Theses and Dissertations. It is important to follow the instructions to the letter.

   In addition to the two copies of the dissertation required by the College of Graduate Studies, one unbound copy with a completed signature page is required by the Nuclear Engineering Program. It is wise to have extra signature pages completed.

Further information on university and general regulations may be found, including the Graduate Handbook for Theses and Dissertations and forms, from the University of Idaho College of Graduate Studies at www.uidaho.edu/cogs/ or the Registrar at www.uidaho.edu/registrar/forms.html (Appendix B).

Appendix A. Faculty Research Areas
Nuclear Engineering Program
University of Idaho

Idaho Falls Faculty

Gunnerson, Fred S., Ph.D., Professor
Thermo-fluids, high temperature heat transfer, nuclear science.
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McBurney-Rebol, Jesse, Instructor
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McEligot, Donald, Ph.D., Faculty
Thermal science: convective heat transfer, fluid mechanics, turbulent, laminar and transitional shear flow: experimental, analytical and computational.
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Pyroprocessing technology--theoretical and experimental studies in electrorefinery, oxide reduction and chemistry, and ion exchange. Interfacial phenomena and multiphase flow systems involving in nuclear and chemical engineering applications.
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Tokuhiro, Akira, Ph.D., Associate Professor
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Moscow Faculty

Bitterwolf, Thomas E., Ph.D., Professor
Hydrogen production, development of novel catalytic materials for the electrolysis of water, generation of ammonia from hydrogen as transportable hydrogen material.
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Chien, Wai , Ph.D., Professor
Supercritical fluid extraction; nanomaterials synthesis; environmental chemistry; separation chemistry.
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Crepeau, John C., Ph.D., P.E. Professor
Transition to turbulence in fluid flow and fluid stability; flow visualization; experimental and theoretical studies of drying and drying processes. Solidification of materials with internal heat generation.
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Charit, Indrajit (Indy), Ph.D., Assistant Professor
Microstructure-Property Correlations, Nuclear Materials, High Temperature Mechanical Behavior of Materials (Creep, Superplasticity, Creep-Fatigue), Nanocrystalline Materials, Advanced Processing Techniques (Mechanical Alloying, Friction Stir Processing), Light Metals, Multi-functional Materials
icharit@uidaho.edu

Machleidt, Ruprecht, Ph.D., Professor
Theoretical nuclear physics, theory of nuclear forces and nuclear matter, theoretical modeling of any kind.
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Potirniche, Gabriel (Gabe), Ph.D., Assistant Professor
Fatigue and fracture, constitutive modeling for metals and polymers, dynamic and impact loading, atomistic simulations, crystal plasticity, anisotropic plasticity, finite element method, solid mechanics
gabrielp@uidaho.edu

Appendix B. Forms and Handbooks

Form	Degree	Where Available
Appointment of Major Professor and/or Committee	ME, MS, PhD	www.grad.uidaho.edu
Study Plan, Change of Study Plan, Change of Curriculum	ME, MS, PhD	www.grad.uidaho.edu
Application for Advanced Degree	ME, MS, PhD	www.uidaho.edu/registrar complete the application on-line
Add/Drop Form		www.uidaho.edu/registrar
Non-Thesis Requirement Report	ME	www.grad.uidaho.edu
Qualifying Examination Result Memo	PhD	Written by the chair of the examination committee and sent to the dep't chair.
Report of Preliminary Examination and Advancement to Candidacy	PhD	www.grad.uidaho.edu
Request to Proceed to Final Defense	MS, PhD	www.grad.uidaho.edu
Report of Final Defense	MS, PhD	College of Graduate Studies (208) 885-6243 uigrad@uidaho.edu
Graduate Handbook for Theses and Dissertations	MS, PhD	www.grad.uidaho.edu
College of Graduate Studies Bulletin	ME, MS, PhD	College of Graduate Studies (208) 885-6243 uigrad@uidaho.edu