Graduate Student Orientation

Spring 2021

January 14, 2021
OVERVIEW

• Welcome to Nuclear Engineering
  • Introductions
  • Faculty and Staff

• Support Services on Campus

• Policies, Procedures and Deadlines
  • Graduate Manual
  • Choosing an advisor (and committee)
  • Making a plan of study
  • Registration

• Student Organizations for Nuclear Engineering
Why Choose Purdue Nuclear Engineering?

- Nuclear Engineering is unique and intriguing
- Graduate salaries start at $60,000+/year
- Students appreciate our small classes.
- Friendly community
- Great research opportunities
- High student-to-professor ratio
Welcome to Nuclear Engineering at Purdue University

• https://engineering.purdue.edu/NE

516 Northwestern Ave. Room # 4025
West Lafayette, IN 47906
Phone: (765) 494-5739
ne@purdue.edu

Student Services Office:
516 Northwestern Ave., Room #4026
Phone: (765) 494-5749
nuclss@purdue.edu
Nuclear Engineering Staff

Holly Mueller
Academic Advisor
hlmuelle@purdue.edu
nuclss@purdue.edu
765-494-5749

Kellie Reece
Administrative Manager
Assistant to the Dept. Head
kreece@purdue.edu
765-494-5741

Teresa Luse
Secretary
Travel and Purchasing
tluse@purdue.edu
765-494-5739

Marketing & Communications Specialist
765-496-2133
Nuclear Engineering Business Office

Sterling Couts
Business Manager
sjcouts@purdue.edu
u765-494-5405

Allison Granger
Research Account Manager
agrange@purdue.edu
765-494-2024

Lisa Meyers
Business Assistant
meyers35@purdue.edu
765 496-0504
Dr. Hany Abdel-Khalik
Associate Professor

Research Interests
• Computational Reactor Physics
• Reduced Order Modeling and Complexity Reduction
• Uncertainty Quantification and Sensitivity Analysis
• Data Assimilation and Model Calibration

Dr. Robert Bean
Assistant Professor

Research Interests
• Application of Advanced Safeguards to the Design of Nuclear Facilities
• Radiation Detection and Measurement
Nuclear Engineering Faculty

Dr. Stylianos Chatzidakis
Assistant Professor
Research Interests
• Radiation detection and Non-proliferation
• Artificial intelligence and Neural Network
• Intelligent Instrumentation Systems and Sensors
• Man-Machine Interface
• Autonomous Systems and Robotics

Dr. Chan Choi
Professor
Research Interests
• Thermonuclear Fusion Plasma Engineering
• Compact Tori Plasma / Reactor Studies
• Inertial Confinement Fusion Beam Target Stability
• Fusion Space Propulsion
• Direct Energy Conversion
• Nuclear Nonproliferation Enabling Capabilities
Nuclear Engineering Faculty

Dr. Allen Garner
Assistant Professor
Undergraduate Program Chair

Research Interests
• Biomedical Applications of Pulsed Power and Plasmas
• Plasma Physics
• Pulsed Power
• High Power Microwaves
• Theoretical Biophysics

Dr. Ahmed Hassanein
Paul L. Wattelet Distinguished Professor

Research Interests
• Plasma Material Interactions
• Magnetic and Inertial Fusion Research
• Computational Physics and Hydrodynamics
• Extreme Ultraviolet Lithography
• Laser and Discharge Produced Plasma
• Radiation and Particle Transport in Materials
• Biomedical Engineering Applications
Nuclear Engineering Faculty

Dr. Mamoru Ishii
*Walter Zinn Distinguished Professor*

Research Interests
- Two-phased Flow Experiments and Modeling Research
- 3-D Two-fluid Model and Interfacial Area Transport Equation Development
- Advanced Light Water Reactor Safety Code Development
- LWR and LMFBR Safety Analysis
- Severe Accident Analysis

Dr. Seungjin Kim
*Capt. James F. McCarthy, Jr. and Cheryl E. McCarthy Head Professor*

Research Interests
- Experimental Two-Phase Flow
- Thermal Hydraulics and Reactor Safety
- Multiphase Instrumentation
Nuclear Engineering Faculty

Dr. Martin Lopez-De-Bertodano
Associate Professor
Research Interests
- Experimental Two-Phase Flow
- Computational Fluid Dynamics
- Turbulence
- Thermal Hydraulics and Reactor Safety
- Nuclear Systems Simulation

Dr. Shripad Revankar
Professor
Graduate Program Chair
Research Interests
- Two-Phase Flow and Heat Transfer
- Advance Reactor Design and Testing
- Advanced Nuclear Fuel Development
- Reactor Safety and Thermal Hydraulics
- Severe Accident Analysis
- Nuclear Hydrogen Generation
- Fuel Cell, Hydrogen Systems, Renewable Energy
Dr. Tatyana Sizyuk  
*Assistant Professor*

Research Interests

- Atomic, Molecular and Plasma Physics
- Atomic Spectra and Plasma Kinetics
- Interaction of Plasma and Particle Beams with Matter
- Radiative Gas Dynamics
- Physics of High Energy Densities
- Nuclear Physics, Neutron Transport
- Computational Physics and Fluid Dynamics
- Permeation and Gating of Protein Channels and Transporters

---

Dr. Rusi Taleyarkhan  
*Professor*

Research Interests

- Nano-to-Macro Scale Applications of Nuclear Science
- Nuclear Reactor Thermal-Hydraulics
- Acoustic Inertial Confinement Fusion Materials and Radiation Dosimetry
- Metastable Fluid
- Radiation Interactions with Matter and Surface Modifications
- Materials Synthesis and Transmutation
- Controlled Hydrogen Production
Dr. Lefteri Tsoukalas  
*Professor*  
Research Interests  
• Neurofuzzy Methodologies for Complex Power Systems Modeling, Diagnostics and Control.  
• Intelligent Instrumentation Systems and Sensors  
• Man-Machine Interface  
• Autonomous Systems and Robotics  

Dr. Yi Xie  
*Assistant Professor*  
Research Interests  
• Corrosion in extreme environment  
• Advanced nuclear fuel  
• Sensor and sensor material  
• Advanced sintering technology  
• Geological repositories of radioactive waste
Dr. Yunlin Xu
Assistant Professor
Research Interests
• Reactor Physics
• Nuclear Reactor Design
• Advanced Nuclear Fuel Cells
• Homeland Security
Introductions

• Name
• Where are you from?
• What are your favorite things to do?
• What are your research area(s) of interest?
Review of Supplement Material
GRADUATE SCHOOL

• Submit Plan of Study (POS)
• Submit Preliminary Exam paperwork
• Submit Thesis/Dissertation
• Responsible Conduct of Research (RCR)

www.purdue.edu/gradschool
Young Hall, Room 170
765-494-2600
REGISTRAR

- Manage Transcripts
- Assist with Late Registration
- Process Grade Changes

www.purdue.edu/registrar
Hovde Hall, First Floor
765-494-8581
BURSAR

- Pay fees
  (http://mypurdue.epurdue.edu)
- Applies Financial Aid to Student Accounts
- Administers Deferred Fee Billing Plans

www.purdue.edu/bursar
Hovde Hall, Room 9
765-494-7570
Responsible Conduct of Research (RCR) Training

• Every graduate student in the School of Nuclear Engineering is required to complete the on-line Collaborative Institutional Training Initiative’s (CITI) Responsible Conduct of Research (RCR) training program within 60 days of starting a graduate program and every five (5) years thereafter.

• Details on the CITI training can be found at: https://about.citiprogram.org/en/series/responsible-conduct-of-research-rcr/.

• Each graduate student must submit a certificate of completion for the CITI training to the Student Services Office by the last day of classes in their first semester in order to receive a grade of “Satisfactory” for the seminar course. The certificate of completion will be retained in the student’s file.
Graduate Staff Employment

• Governed by

Graduate Staff Employment Manual
Updated: May 20, 2020

FERPA Certification

• Family Education Rights and Privacy Act
• If you are a grader and/or a TA at any point, you MUST be FERPA certified
  • http://www.purdue.edu/policies/pages/records/c_51.html
  • Permission to Transmit Information Form www.purdue.edu/registrar
  • 765-494-8219
• Before being appointed to a teaching assistant position, a student must be certified by one of the accepted methods (Oral English Proficiency Test or performance in ENGL 62000)
• Students should work with Student Service Office (nuclss@purdue.edu) to register and prepare for the OEPT and, if necessary, enroll in ENGL 62000.
• ENGL 62000 is an English as a second language course in oral communication exclusively for non-native, English-speaking TAs.
• The OPET is a computer-based test used by the OEPP to screen prospective TAs for English language proficiency. While taking the test, candidates respond to a variety of questions, present information and speak extemporaneously on a range of topics. The responses are recorded and evaluated by at least two trained raters.
• A score of 50 or higher is required for certification.
### OEPT: Certification Methods

<table>
<thead>
<tr>
<th>Test</th>
<th>Minimum Scores Accepted for Oral English Certification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral English Proficiency Test</td>
<td>50</td>
</tr>
<tr>
<td>TOEFL iBT (speaking sub-score)</td>
<td>27</td>
</tr>
<tr>
<td>IELTS (speaking band score)</td>
<td>8.0</td>
</tr>
<tr>
<td>PTE (speaking sub-score)</td>
<td>76</td>
</tr>
<tr>
<td>TOEFL (computer or paper based test)</td>
<td>Not Accepted for Oral English certification</td>
</tr>
<tr>
<td>Test of Written English</td>
<td>Not Accepted for Oral English certification</td>
</tr>
<tr>
<td>SPEAK (from other institutions)</td>
<td>Not Accepted for Oral English certification</td>
</tr>
</tbody>
</table>
REGISTERING for OEPT

If your major professor asks that you TA for a course or be a grader, and you are not automatically certified from your TOEFL or IELTS scores, please:

• Visit the OEPP website (www.purdue.edu/oepp)
• Find 2 exam time periods that work for you
• Email Student Service Office (nuclss@purdue.edu) with the exam dates
• Take the practice exam
REQUIREMENTS for the PROGRAM

Graduate Manual, Plan of Study and Registration
NE Graduate Manual

July 2020 Edition

- Contains supplementary regulations and procedures that are specific to the School of Nuclear Engineering.
- It is not intended to replace information, regulations, or procedures contained in the Graduate School's "Policies and Procedures Manual for Administering Graduate Student Programs" or other University or Graduate School publications.
- In the event of conflict, the Graduate School and/or University regulations shall prevail over School policies.
CHOOSING an ADVISOR (and Committee)

• A person who can guide your research
• Usually the person providing funding
• Often determined before your arrive – if not, conduct a careful search
• Work with your advisor to choose your committee
• For additional information or questions, Grad Chair (Prof. Revankar Email/ meet /appointment)
• - If there is a certain faculty member you want to meet with, e-mail them to make sure they will be in their office
PLAN of STUDY: Master’s Students and PhD Students

Directions are in your supplied material for how to complete the Plan of Study

• Purdue University Graduate School
  www.purdue.edu/GradSchool

• NE Graduate Manual
  new link
CORE CURRICULUM: Master’s Students

Nuclear Engineering Graduate Manual

- 5 Core Courses (3 credits each): NUCL 501 (Intro), NUCL 504 (Radiation), NUCL 510 (Reactor Physics), NUCL 520 (Reactor Materials) and NUCL 551 (Thermal Hydraulics)
- 2 additional courses (3 credits each) of Math or Computer Science or other approved computational course
- Students who have not received a Bachelor of Science in Nuclear Engineering at Purdue **MUST** take NUCL 501
- Student who did not get an Undergraduate BSNE from Purdue **MUST** take NUCL 504
- Total 30 Credits hours are required
  - Thesis Based: 24 course credit hours (500 or 600 level) + 6 credit hours research
  - Course Based (non-thesis): 30 total course credit hours
CORE CURRICULUM: PhD Students

Nuclear Engineering Graduate Manual

• Core Courses: NUCL 501 (Intro), NUCL 504 (Radiation), NUCL 510 (Reactor Physics), NUCL 520 (Reactor Materials) and NUCL 551 (Thermal Hydraulics)

• 2 additional courses (3 credits each) of Math or Computer Science or other approved computational course

• Students who have not received a Bachelor of Science in Nuclear Engineering at Purdue must take NUCL 501

• Student who did not get an Undergraduate BSNE from Purdue must take NUCL 504

• 90 total credit hours are required to graduate
  • 48 credits hours of graduate coursework (500 and 600 level courses)
  • Minimum 3 courses 600 level
  • 42 credits hours of research
REGISTRATION FORM 23
(Schedule Revision Request)

1. PUID
2. Name
3. Term (Fall 2020)
4. College (College of Engineering or CoE)
5. Program (Nuclear Engineering or NE)
6. Classification (Graduate Student or GR)
7. Add (A); Drop (D); Modify (M)
8. CRN (Course Request Number / 5 digit number)
9. Subject (NUCL)
10. Course Number
11. Credits
12. Faculty Advisor Signature
13. Student Signature

Submit the Form 23 to Nuclear Grad student service office:
nuclss@purdue.edu

Once you are registered, you will receive an email to review your registration
### Spring 2021 Drop & Add Refund Dates

January 19 – May 8

#### TO ADD/MODIFY CREDITS or CHANGE GRADE MODE for a COURSE

<table>
<thead>
<tr>
<th>16 Weeks</th>
<th>1st 8 Weeks</th>
<th>2nd 8 Weeks</th>
<th>Approvals Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan 19 – Jan 25 Week 1</td>
<td>Jan 19 – Jan 20</td>
<td>Mar 15 – Mar 17</td>
<td>(Course Space Availability Required) Students may add courses via myPurdue Scheduling Assistant</td>
</tr>
<tr>
<td>Jan 26 – Feb 12 Week 2 - 4</td>
<td>Jan 21 – Feb 1</td>
<td>Mar 18 – Mar 29</td>
<td>Advisor and Instructor Submit using Scheduling Assistant</td>
</tr>
<tr>
<td>Feb 1</td>
<td>Jan 25</td>
<td>Mar 22</td>
<td>Last day to audit a course, submit request using Scheduling Assistant after officially registered. Advisor, Instructor, and Head of Department in which the course is listed. Submit using Scheduling Assistant</td>
</tr>
<tr>
<td>Feb 13 – Mar 22 Week 5 - 9</td>
<td>Feb 2 – Feb 16</td>
<td>Mar 30 – Apr 13</td>
<td></td>
</tr>
</tbody>
</table>

#### TO DROP/WITHDRAW from a COURSE

<table>
<thead>
<tr>
<th>16 Weeks</th>
<th>1st 8 Weeks</th>
<th>2nd 8 Weeks</th>
<th>Action Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan 19 – Feb 1 Weeks 1 - 2</td>
<td>Jan 19 – Jan 25</td>
<td>Mar 15 – Mar 22</td>
<td>No signatures (Course not recorded) Students may drop courses via myPurdue Scheduling Assistant</td>
</tr>
<tr>
<td>Feb 2 – Feb 12 Weeks 3 - 4</td>
<td>Jan 26 – Feb 1</td>
<td>Mar 23 – Mar 29</td>
<td>Advisor (Course recorded with a grade of &quot;W&quot;) Submit using Scheduling Assistant</td>
</tr>
<tr>
<td>Feb 13 – Mar 22 Week 5 - 9</td>
<td>Feb 2 – Feb 16</td>
<td>Mar 30 – Apr 13</td>
<td>Advisor and Instructor (Instructor shall indicate whether passing or failing.) Grades of &quot;W&quot;, &quot;WF&quot;, or &quot;WN&quot; will be recorded. Students with a semester classification of 1 or 2 do not need the instructor action; grades will be &quot;W&quot;. Submit using Scheduling Assistant</td>
</tr>
</tbody>
</table>

#### REFUND PERCENTAGE OF FEES & TUITION

**Jan 27 Prepayment & $200 Late Registration fee begins**

<table>
<thead>
<tr>
<th>16 Weeks</th>
<th>1st 8 Weeks</th>
<th>2nd 8 Weeks</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before Jan 27</td>
<td>Before Jan 27</td>
<td>Before Mar 15</td>
<td>100%</td>
</tr>
<tr>
<td>Jan 27 – Feb 2</td>
<td>n/a</td>
<td>Mar 15 – Mar 22</td>
<td>80%</td>
</tr>
<tr>
<td>Feb 3 – Feb 15</td>
<td>Jan 27 – Feb 1</td>
<td>Mar 23 – Mar 29</td>
<td>60%</td>
</tr>
<tr>
<td>Feb 16 – Mar 1</td>
<td>Feb 2 – Feb 8</td>
<td>Mar 30 – Apr 5</td>
<td>40%</td>
</tr>
<tr>
<td>After Mar 1</td>
<td>After Feb 8</td>
<td>After Apr 5</td>
<td>NONE</td>
</tr>
</tbody>
</table>

**LEGEND**

- 16 weeks = courses meeting full 16 week semester
  - January 19 – May 8 76 days
- 1st 8 weeks = courses meeting 1st 8 weeks only
  - January 19 – March 12 38 days
- 2nd 8 weeks = courses meeting 2nd 8 weeks only
  - March 15 – May 8 38 days
Questions
Additional Presentation Are available

https://engineering.purdue.edu/NE/foryou/graduate/orientation
Videos

- Research Integrity Office Overview - Ethics, Responsible Conduct of Research and iThenticate Program, Academic Integrity
- Nuclear Engineering Graduate Organization (NEGO)

Student Organizations

- Women in Engineering Programs (WIEP)
- Women in Nuclear Engineering
- American Nuclear Society
- NEGO
- Alpha Nu Sigma
- Purdue Graduate Student Government (PGSG)
Presentation Slide Downloads

- Graduate Student Orientation – Spring 2021- January 14, 2021 (PDF)
- New Graduate Student Orientation (PDF)
- Research Integrity Office (PDF)
- Academic Integrity & You: Graduate Edition (PDF)
- Orientation to the Purdue Libraries & School of Information Studies (PDF)
- ECN (Engineering Computer Network) (PDF)
College of Engineering Information

- Welcome Letter for Orientation - Fall 2020 (PDF)
- Required: Graduate Student Responsible Conduct of Research (RCR) (PDF)
- Introduction to Funding (PDF)
- Apply for Fellowships & Scholarships (PDF)
- Mentoring: For Graduate School and Beyond (PDF)
- Engineering Academic Career Club (EACC) (Image)
- Graduate Mentoring Program from the Women in Engineering Program (Video)
Thank You