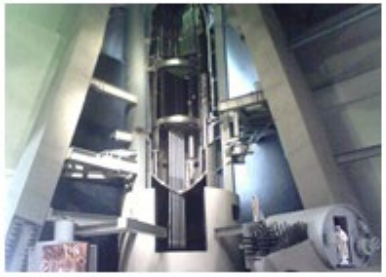


PURDUE UNIVERSITY

School of Nuclear Engineering

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:

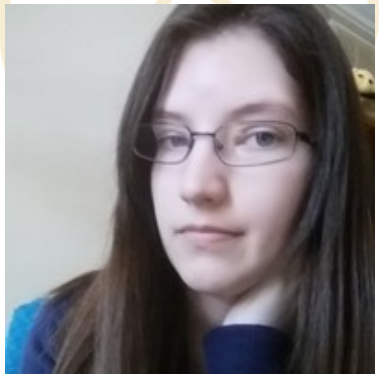
516 Northwestern Ave., Room #4026
Phone: (765) 494-5749
nuclss@purdue.edu

Nuclear Engineering Graduate Program

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

Dr. Shripad T. Revankar
Graduate Program Chair
Professor

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

Nuclear Engineering Faculty

Dr. Hany Abdel-Khalik
Associate Professor

Research Interests

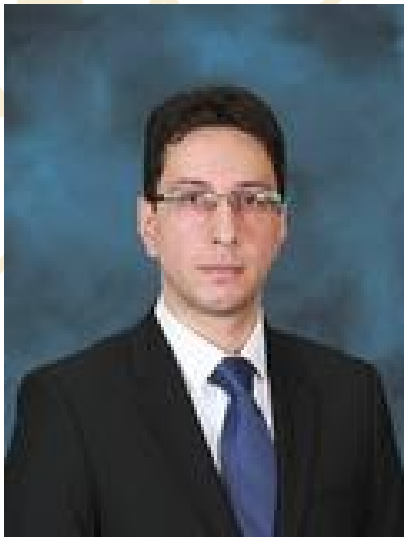
- Computational Reactor Physics
- Reduced Order Modeling and Complexity Reduction
- Uncertainty Quantification and Sensitivity Analysis
- Data Assimilation and Model Calibration

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

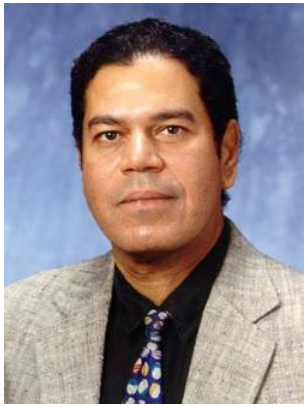
- Thermonuclear Fusion Plasma Engineering
- Compact Tori Plasma / Reactor Studies
- Inertial Confinement Fusion Beam Target Stability
- Fusion Space Propulsion
- Direct Energy Conversion
- Nuclear Nonproliferation Enabling Capabilities

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

Nuclear Engineering Faculty

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

Nuclear Engineering Faculty

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

Nuclear Engineering Faculty

Dr. Yunlin Xu

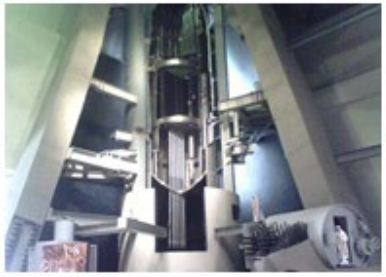
Assistant Professor

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?



PURDUE UNIVERSITY

School of Nuclear Engineering

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

https://www.purdue.edu/gradschool/documents/gpo/graduate-student-employment-manual.pdf

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

ORAL ENGLISH PROFIENCY TEST (OEPT)

- 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.

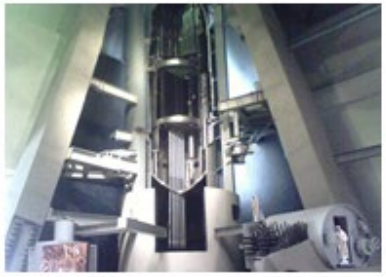
OEPT: Certification Methods

Test	Minimum Scores Accepted for Oral English Certification
Oral English Proficiency Test	50
TOEFL iBT (speaking sub-score)	27
IELTS (speaking band score)	8.0
PTE (speaking sub-score)	76
TOEFL (computer or paper based test)	Not Accepted for Oral English certification
Test of Written English	Not Accepted for Oral English certification
SPEAK (from other institutions)	Not Accepted for Oral English certification

REGISTERING for OEPT

If your major professor askes 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



PURDUE UNIVERSITY

School of Nuclear Engineering

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 REGISTRATION CALENDAR

https://www.purdue.edu/registrar/calendars/

SPRING 2021 DROP & ADD REFUND DATES

January 19 – May 8

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

16 Weeks	1st 8 Weeks	2nd 8 Weeks	APPROVALS REQUIRED
Jan 19 – Jan 25 Week 1	Jan 19 – Jan 20	Mar 15 – Mar 17	(COURSE SPACE AVAILABILITY REQUIRED) Students may add courses via myPurdue Scheduling Assistant
Jan 26 – Feb 12 Week 2 - 4	Jan 21 – Feb 1	Mar 18 – Mar 29	Advisor and Instructor Submit using Scheduling Assistant
Feb 1	Jan 25	Mar 22	Last day to audit a course, submit request using Scheduling Assistant after official registered.
Feb 13 – Mar 22 Week 5 - 9	Feb 2 – Feb 16	Mar 30 – Apr 13	Advisor, Instructor, and Head of Department in which the course is listed. Submit using Scheduling Assistant.

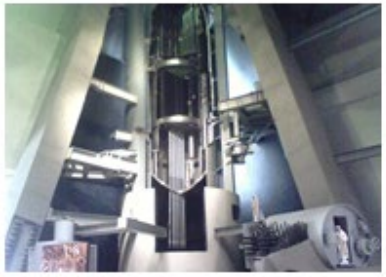
TO DROP/WITHDRAW from a COURSE

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

REFUND PERCENTAGE OF FEES & TUITION **Jan 27 Prepayment & $200 Late Registration fee begins**

16 Weeks	1st 8 Weeks	2nd 8 Weeks	PERCENTAGE
Before Jan 27	Before Jan 27	Before Mar 15	100%
Jan 27 – Feb 2	n/a	Mar 15– Mar 22	80%
Feb 3 – Feb 15	Jan 27 – Feb 1	Mar 23 – Mar 29	60%
Feb 16 – Mar 1	Feb 2 – Feb 8	Mar 30 – Apr 5	40%
After Mar 1	After Feb 8	After Apr 5	NONE

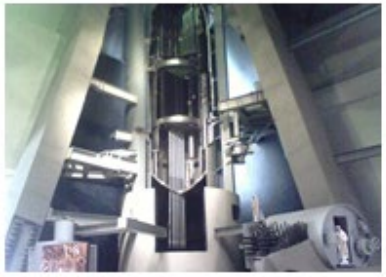
LEGEND
16 weeks = courses meeting full 16 week semester January 19 – May 8 76 days
1st 8 weeks = courses meeting 1st 8 weeks only January 19– March 12 38 days
2nd 8 weeks = courses meeting 2nd 8 weeks only March 15 – May 8 38 days



PURDUE UNIVERSITY

School of Nuclear Engineering

Questions



PURDUE UNIVERSITY

School of Nuclear Engineering

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

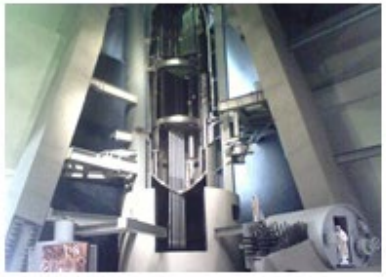
- Women in Engineering Programs (WIEP)
- Women in Nuclear Engineering
- American Nuclear Society
- NEGO
- Alpha Nu Sigma
- Purdue Graduate Student Government (PGSG)

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)



PURDUE UNIVERSITY

School of Nuclear Engineering

Thank You