OVERVIEW

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Welcome to Nuclear Engineering at Purdue!

www.engineering.purdue.edu/NE
Phone: 765-494-5739
Fax: 765-494-9570
Graduate Program

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

Dr. Shripad T. Revankar
Professor
Graduate Program Chairman

Dr. Chan Choi
Professor, Professor-in-Charge
Academic Programs
Nancy Vestal
Academic Program Coordinator
nvestal@purdue.edu
765-494-5749

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

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

Shawn Dildine
Marketing & Communications Specialist
765-496-2133
sadildin@purdue.edu
BUSINESS OFFICE

Jill Clauson, Account Assistant
765-494-2583
jclauson@purdue.edu

Allison Granger, Operations Manager
765-494-7905
agrange@purdue.edu

Sara Gretencord, Business Manager
765-494-2978
sgreten@purdue.edu
Dr. Robert Bean
Assistant Professor

Dr. Hany Abdel-Khalik
Associate Professor

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

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

Dr. Allen Garner
Assistant Professor

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

Dr. Takashi Hibiki
Professor

Research Interests
• Basic two-phase flow and heat transfer modeling
• Interfacial area transport equation development
• Thermal-hydraulic research in micro/mni-channel
• Thermal-hydraulic research at micro-gravity conditions
• Flow-induced vibration analysis
• Research reactor utilization for industrial purposes
Dr. Mamoru Ishii
Walter Zinn Distinguished Professor

Research Interests
- Two-phase flow experiments and modeling research
- 3-D two-fluid model and interfacial area transport equation development
- Interfacial transfer phenomena in multiphase flow systems
- 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 and Professor

Research Interests
- Experimental Two-Phase Flow
- Thermal Hydraulics and Reactor Safety
- Multiphase Instrumentation
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. Gennady Miloshevsky
Associate 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
• Warm dense matter

• Nuclear physics, Neutron transport
• Computational physics and Fluid Dynamics
• Multiphase flows
• Molecular Dynamics and Monte Carlo methods
• Hartree-Fock and DFT methods
• Permeation and gating of protein channels and transporters
• Continuum electro-elasticity of lipid bilayers
Dr. Shripad T. Revankar
Professor

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
• Models and methods in computational physics
• Laser Produced Plasmas - models development and validation, applications and research
• Plasma-material interactions in fusion reactor and industrial applications
• Advanced nanolithography
• Advanced numerical methods
• Algorithms for parallel computing on multiprocessor systems
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. Janelle P. Wharry
Assistant Professor

Research Interests
• Materials for nuclear power applications
• Irradiation effects on microstructure-property relationships
• Micromechanics and small-scale mechanical testing of materials
• Materials characterization
http://www.purdue.edu/registrar

Hovde (first floor)
765-494-8581

• Manage Transcripts
• Assist with Late Registration
• Process Grade Changes
http://www.purdue.edu/bursar
Hovde (room 9)
765-494-7570

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

FAMILY EDUCATIONAL RIGHTS AND PRIVACY ACT

If you are a grader or TA at any point, you MUST be FERPA certified

http://www.purdue.edu/policies/pages/records/c_51.html
765-494-8219
http://www.purdue.edu/Registrar
Permission to Transmit Information Form
If you are a TA or Grader…

Before being appointed to a teaching assistant position, a student must be certified by one of the accepted methods. Students should work with departmental liaisons to register and prepare for the Oral English Proficiency Test (OEPT), and, if necessary, enroll in English 62000: "Classroom Communication for International Graduate Students."

The OEPT is a computer-based test used by the OEPP to screen prospective ITAs 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.
If your major professor asks that you TA a course or be a grader and you are not automatically certified from your TOEFL or IELTS, please:

- Visit OEPP website
- Find 2 exam time periods that work for you
- Email nvestal@purdue.edu with the exam dates
- Take the practice exam
Choosing an Advisor (and committee)

• A person who can guide your research

• Usually also the person providing funding

• Often determined before you arrive -If not – conduct a careful search

• Work with your advisor to choose your committee

• For additional information or questions Profs. Choi and Revankar will be available Friday, August 18th from 2:00pm – 4:00pm in their offices
  -If there is a certain faculty member you want to meet with, e-mail them to make sure they will be there
PLAN OF STUDY
MASTER’S STUDENTS

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

• NE Graduate Manual
  http://engineering.purdue.edu/NE/Academics/Graduate/index.html

• Graduate School Manual
  -www.gradschool.purdue.edu/faculty/publications.cfm
  -Policies & Procedures Manual for Administering Graduate Student Programs

❖ Directions are in your binder for how to complete the Plan of Study!
• Purdue University Graduate School
  - www.purdue.edu/GradSchool

• NE Graduate Manual
  http://engineering.purdue.edu/NE/Academics/Graduate/index.html

• Graduate School Manual
  - www.gradschool.purdue.edu/faculty/publications.cfm
  - Policies & Procedures Manual for Administering Graduate Student Programs

❖ Directions are in your binder for how to complete the Plan of Study!
Nuclear Engineering Graduate Manual

- NUCL 501 (Intro)
- NUCL 504 (Radiation)
- NUCL 510 (Reactor Physics)
- NUCL 551 (TH)
- NUCL 580 (Communications)
- 6 additional credit hours of math or computer science
- Students who have not received a Bachelor of Science in Nuclear Engineering MUST take NUCL 501
- Students who did not get an Undergraduate BSNE from Purdue MUST take NUCL 504
- 27 total credit hours are required to graduate with thesis
- 33 total credit hours are required to graduate with non-thesis
Nuclear Engineering Graduate Manual

- NUCL 501 (Intro)
- NUCL 504 (Radiation)
- NUCL 510 (Reactor Physics)
- NUCL 551 (TH)
- NUCL 580 (Communications)
- 6 additional credit hours of math or computer science
- Students who have not received a Bachelor of Science in Nuclear Engineering MUST take NUCL 501
- Students who did not receive a BSNE from Purdue MUST take NUCL 504
- 90 total credit hours are required to graduate
  - 48 credit hours of graduate coursework
1. PUID
2. Name
3. Term
   - Fall 2016
4. College
   - College of Engr (CoE)
5. Program
   - Nuclear Engineering (NE)
6. Classification
   - Graduate Student (GR)
7. Add (A); Drop (D); Modify (M)
8. CRN (5 digit number)
9. Subject (NUCL)
10. Course Number
11. Credits
12. Faculty Advisor Signature
13. Student Signature
14. Submit to Academic Program Administrator
15. Once you are registered, you will receive an email to review your registration
• August 21 – August 27  
  Students may add courses via MyPurdue

• August 29 – Sept 18  
  Advisor and Instructor signatures required via Form 23 to add courses

• Sept 1  
  Last day to audit a course  
  Audit forms available from the Office of the Registrar

• Sept 19 – Oct 24  
  Advisor, Instructor and Department Head signatures required via Form 23 to add courses  
  Extenuating circumstances only