

# Application Process

## Minimum admission requirements

- A bachelor's degree from a college or university accredited by the cognizant regional accrediting agency
- Undergraduate preparation in the proposed major field equivalent to that acquired by a graduate of Kansas State University or evidence of an appropriate background for undertaking an advanced degree program
- Cumulative grade point average (GPA) of 3.0 or higher on a 4.0 scale, or GPA of 3.0 in the last 60 hours of coursework

## Application deadlines

- Jan. 8 for fall (August) enrollment
- Aug. 1 for spring (January) enrollment
- Dec. 1 for summer (June) enrollment

## International student requirements

Test	Minimum score
IBT TOEFL (internet-based)	79
TOEFL (PBT)	550
IELTS	6.5
Pearson Test of English (PTE)	58

All application materials can be submitted online at [k-state.edu/grad/application](http://k-state.edu/grad/application).



## Financial assistance

The Carl R. Ice College of Engineering offers competitive graduate research assistantships (GRAs) and graduate teaching assistantships (GTAs), providing stipend and tuition support. Competitive research grants and contracts support GRAs and the college supports GTAs.

Several graduate student scholarships are available through the college. Graduate students are also eligible for philanthropic and nationally funded graduate fellowships.

## English language program (ELP)

Kansas State University offers English language graduate support courses. ELP academic advisers help students, who are admitted to study in a degree program, make the transition from the ELP into their academic departments. For more information, visit [k-state.edu/elp](http://k-state.edu/elp).



## Helpful websites

Engineering Research and Graduate Programs  
[engg.k-state.edu/ergp](http://engg.k-state.edu/ergp)

Graduate catalog  
[catalog.k-state.edu/index.php?catoid=2](http://catalog.k-state.edu/index.php?catoid=2)

Cost-of-living and tuition information  
[k-state.edu/sfa/costofattendance](http://k-state.edu/sfa/costofattendance)

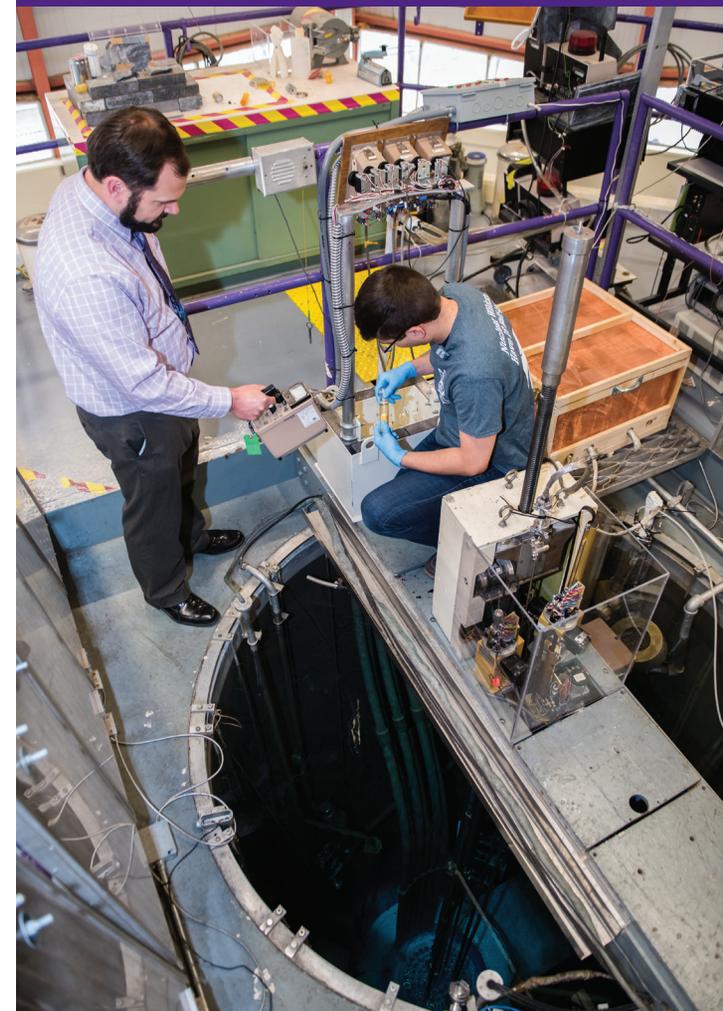
Graduate student life information  
[k-state.edu/grad/students](http://k-state.edu/grad/students)

### Notice of Nondiscrimination

Kansas State University is committed to nondiscrimination in admissions, programs and employment. Inquiries and complaints: Contact Director of Institutional Equity, Kansas State University, 103 Edwards Hall, Manhattan, KS 66506-4801, (Phone) 785-532-6220.

# MECHANICAL AND NUCLEAR ENGINEERING

## Graduate Program



**KANSAS STATE**  
UNIVERSITY

Carl R. Ice College of Engineering

[mne.k-state.edu](http://mne.k-state.edu) • [grad@mne.k-state.edu](mailto:grad@mne.k-state.edu)  
785-532-5610

# Welcome

Graduate students in the Alan Levin Department of Mechanical and Nuclear Engineering have access to excellent research facilities. These include the Cooling and Heating Innovation Laboratory, Institute for Environmental Research, Mechanical Testing and Evaluation Laboratory, Multiphase Microfluidics Laboratory, Multiscale Computational Physics Laboratory, Nanoscience and Engineering Laboratory, National Gas Machinery Laboratory, Nonlinear Controls Laboratory, Radiation Measurement Applications Laboratory, Semiconductor Materials and Radiological Technologies Laboratory, Thermal Hydraulics Laboratory and TRIGA Mark II reactor.



The department also hosts several Linux clusters for computational research. The SMART lab, which has Class 100 and Class 1000 clean rooms, a scanning electron microscope, an Auger electron analyzer, furnaces, evaporators, polishers, mills and other equipment; the TRIGA reactor, which is licensed to operate at up to 1.25 MW, and Institute for Environmental Research and National Gas Machinery Laboratory are especially unique facilities with national reputations.

Sincerely,  
Steven Eckels  
Interim department head and professor



# Research Areas

## Radiation detector systems

This research focuses on new material development; design, fabrication and optimization of novel radiation detectors; and application of detector systems. Research emphasis areas include materials purification, crystal growth and characterization, advanced semiconductor detector design, invention of new detector technologies, radiation detector systems development and non-destructive measurements.

## Nanoscale research

This research focuses on understanding and control of matter at dimensions between approximately one and 1,000 nanometers, where unique phenomena enable novel applications. Research emphasis areas include nanomaterials for energy storage, computational fluid dynamics in nano and micro domains, nanoscale and microscale heat transfer.

## Reactor analysis

The research focuses on development of computational and experimental methods for better understanding nuclear energy systems and radiation interaction with matter. Research emphasis areas include advanced methods for particle transport, thermal hydraulics and reactor safety, reactor benchmark experiments, advanced shielding methods and algorithms for large-scale simulations.

## Materials and mechanics

This group conducts research on modeling, simulation and experimental evaluation of fabrics, composites, metals, plastics, and acoustic and elastic metamaterials at multiple-size scales.

## Energy systems

Thermal science focus on energy systems is far reaching, and covers traditional and emerging technology. Research areas include building and transportation of heating, ventilating and cooling systems, contaminate transport and filtration, and biosystems modeling including human thermal comfort, turbo machinery, evaporator and condenser design.

# Degrees



## Master of Science

The department offers Master of Science degrees in both mechanical and nuclear engineering. The programs are designed to prepare students for advanced positions in industry, consulting and government, as well as for further graduate studies toward a doctorate degree. The master's degree requires a minimum of 30 credit hours of graduate-level course/research work. A distance option is available in both master's programs.



## Doctor of Philosophy

The department offers Doctor of Philosophy degree programs in both mechanical and nuclear engineering. Both degrees are research oriented, designed to prepare students for advanced research positions in industry, government labs and university-level academics. The doctorate program requires 60 credit hours beyond the master's degree, including original research of sufficient quality and importance to merit publication in refereed journals. Both mechanical and nuclear engineering programs offer a straight bachelor's-to-doctorate option, which requires 90 credit hours.