Welcome from the department head

Manhattan, Kansas and K-State campus

Graduate students in the mechanical and nuclear engineering (MNE) department have access to excellent research facilities. These include the Cooling and Heating Innovation Laboratory (CHIL), Institute for Environmental Research (IER), Mechanical Testing and Evaluation Laboratory (MTEL), Multiphase Microfluidics Laboratory, Multiscale Computational Physics Laboratory (MCPL), Nanoscience and Engineering Laboratory, National Gas Machinery Laboratory (NGML), Nonlinear Controls Laboratory, Radiation Measurement Applications Laboratory, Semiconductor Materials and Radiological Technologies (SMART) 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 IER and NGML are especially unique facilities with national reputations.

Sincerely,
William Dunn
Department head and professor

K-State rankings

Our engineering graduate program is currently 59th in the U.S. News and World Report Public School rankings. K-State is recognized by the Princeton Review as one of America’s best colleges.

Manhattan community

Manhattan, nicknamed “The Little Apple,” is a great environment to start a new chapter of your life. The city ranks among the best classic college towns in the country.

Aggieville

Aggieville, an entertainment district close to campus, features more than 100 restaurants, bars and shops, many of which are locally owned. It has been a popular attraction for more than 125 years.

Helpful websites

Cost-of-living and tuition information:
k-state.edu/sfa/costofattendance/gtc.html

Graduate student life information:
k-state.edu/grad/students/graduatetestudentlife/GraduateStudentLife.html

Engineering graduate programs information:
engg.ksu.edu/ergp/grad-program

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 66506-4401, (Phone) 785-532-6220; (TTY) 785-532-4807.
Radiation detector systems
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, non-destructive measurements.

Nanoscale research
Research focusing on understanding and control of matter at dimensions between approximately 1 and 1000 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
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, algorithms for large scale simulations.

Materials and mechanics
The MM 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, biosystems modeling including human thermal comfort, turbo machinery, evaporator and condenser design.

M.S. degree
The department offers Master of Science (M.S.) degrees in both mechanical engineering 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 Ph.D. The M.S. degree requires a minimum of 30 credit hours of graduate-level course/research work. A distance option is also available in both M.S. programs.

Ph.D. degree
The department offers Doctor of Philosophy (Ph.D.) degree programs in nuclear engineering and mechanical engineering. Both degrees are research-oriented, designed to prepare students for advanced research positions in industry, government labs and university-level academics. The Ph.D. 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 programs offer a straight B.S. to Ph.D. option, which requires 90 credit hours.

Financial assistance
The MNE program offers competitive Graduate Research Assistantships (GRAs) and Graduate Teaching Assistantships (GTAs) on a competitive basis with preference given to Ph.D. students. Both GRA and GTA positions provide a stipend and tuition support. GRA support is provided through cutting-edge research projects funded by various funding agencies and the private sector.

MNE degrees

Minimum admission
- B.S. degree in mechanical or nuclear engineering, or similar discipline (full admission)
- B.S. degree in another engineering or non-engineering discipline (provisional admission)
- Cumulative GPA of at least 3.0 on a 4.0 scale
- GRE scores required (no minimum)

International student requirements
- Internet-based TOEFL: 79 or higher, with no score below 20 on reading, listening and writing sections
- IELTS: 6.5 or higher on reading, listening and writing sections
- Pearson Test of English (PTE): 58 or higher with no section score below 58

Application deadlines
January 8 for fall (August) enrollment
August 1 for spring (January) enrollment
December 1 for summer (June) enrollment

Application process

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.

Visit k-state.edu/elp for more information.