Benefits

Hiring Incentives
Hiring incentives for engineers who have successfully completed the nuclear power generation systems minor may range from signing bonuses to increased starting pay, depending on specific corporate policies.

Tuition-Assistance Scholarships and Special Book Funds
Tuition-assistance scholarships and special book funds will be available to high-performing participants, based on annual funding support.

Internship and Co-Op Opportunities
Industry sponsors of the minor will make a number of paid internships and co-op opportunities available for nuclear power generation systems minor participants.

Jump-Start Your Career
As one Tennessee Valley Authority executive recently said, “The graduate coming out of this minor will be productive from day one – it will be like having a two-year head start on your career.”

Areas of Emphasis
- Regulation, safety, reliability and dependability
- Radiological health and work control practices
- Training requirements for operators and maintenance technicians

For additional information, please contact:
Bill Goodwin, Director, at jwg0008@auburn.edu

Curriculum

ENGR 2700. Introduction to Nuclear Power Operations
Basic overview of U.S. nuclear power generation system capabilities. Career options for graduates will be discussed by industry leaders and faculty.

ENGR 3710. Basic Nuclear Theory and Operations I
Introduction to the generic pressurized water reactor, alternative plant designs, fluid systems, nuclear heat generation methods, heat transfer systems, basic pump theory, managing decay heat removal, construction materials and the regulation of plant construction. Emerging Generation IV designs are also discussed in detail by industry leaders.

ENGR 3720. Basic Nuclear Theory and Operations II
Materials topics include primary plant and secondary plant chemistry controls, emphasizing their importance in life cycle maintenance plan and safety. Electrical topics include basic electrical/electronic theory, data and control instrumentation, electrical generation and distribution and prime standard alignments/alignment checks.

ENGR 4710. Advanced Reactor Plant Operations I
Advanced safety topics include radiation types, physical shielding, exposure controls, engineered safeguards, reactor accident planning, reliability engineering methods and work package controls in the nuclear industry.

ENGR 4720. Advanced Reactor Plant Operations II
Classic nuclear power plant operations with an emphasis on safety compliance and safety culture. Operations include reactor startup, steady state operations, shut down operations, decay heat removal concerns, plant maintenance conditions, operator training and certifications, plant certifications and regulations, sub-contractor safety responsibilities and regulations.