POWER GENERATION TECHNOLOGY

New enrollments into this program are restricted as of Summer 2025. Please contact an academic advisor about alternative options.

Overview

Degrees Offered: AAS, Program Certificate
Limited Enrollment: Yes
Program Begins: Fall, Spring
Delivery Method: Online, On Campus
Phone: 701-224-5651 • 800-852-5685
Email: bsc.energy@bismarckstate.edu

Description

The Power Generation Technology program at BSC focuses on educating and training students and incumbent workers in the operation of electrical generation facilities of various types. BSC offers on campus and online options that prepare graduates for entry-level jobs at modern power plants where steam and/or electricity is generated. Students learn all phases of the industry, including operation of equipment and systems, mechanical and chemical technology, and the safety culture of the industry.

A limited number of students are enrolled in August for courses on campus. Courses offered online begin every three to five weeks and are not subject to limited enrollment.

Preparation

Background in basic chemistry, basic physics, and high school Algebra I is helpful. Prospective students should be prepared for the physical demands of entry-level technician positions. Typical industry requirements include passing a physical exam, which may entail lifting 50+ pounds, climbing ladders, and working in confined spaces or heights. Job applicants also may be required to pass a drug screen and eye exam, including the ability to distinguish between colors accurately. Energy industry jobs typically require shift work and overtime hours.

Requirements

Students who complete the degree plan requirements receive a Program Certificate or Associate in Applied Science degree.

Career Opportunities

A career in power generation technology provides excellent pay and employability with strong job demand expected nationwide for years to come. Graduates are prepared to work in the electrical generation field but also have fundamental knowledge to work in water treatment plants, wind farms, process technology facilities, co-generation power plants and many other types of manufacturing facilities. Besides power plants, job settings include research and development facilities, industrial process operations, or the sales and service fields.

Additional Information

Credits from this program may be applied to BSC's Bachelor of Applied Science degree (BAS) in Energy Management, offered entirely online. The BAS is designed for individuals interested in supervisory and management positions in the energy industry. The BAS builds on the foundation laid in an AAS degree and includes general education classes, core management courses, and energy specific management courses.

BSC's National Energy Center of Excellence was designated as the National Power Plant Operations Technology and Education Center by U.S. Energy Secretary Samuel W. Bodman in 2007. This official designation recognizes BSC as the premier national center of education and training for operators and technicians in the energy industry.

Degree Plans

- Power Generation Technology Associate in Applied Science
- Power Generation Technology Program Certificate

Program Learning Outcomes

Upon graduation, Power Generation Technology students will be able to:

- Explain an operator's responsibilities and demonstrate safe, professional and ethical characteristics necessary in the industry.
- Describe the design and operation of, as well as diagnose and troubleshoot various equipment and systems used in process/power facilities including instrumentation and auxiliary systems.
- Employ mathematics, chemistry and thermodynamics in a systematic, safe and comprehensive manner to meet standards and achieve quality and efficiency.

- Utilize industry standards when reading and interpreting piping and instrumentation drawings.
- Demonstrate excellent communication skills to ensure safe and optimal operation in a diverse environment.
- Demonstrate the skills and knowledge necessary in the operation of complex equipment and systems such as boilers, environmental equipment, electrical generators, turbines and electrical protection devices.