



# Energy Generation Operations

Milford Campus

Associate of Applied Science degree

Energy generation operators must understand and oversee all aspects of a power-generating facility, whether that facility is generating electricity or liquid fuels. We offer focus areas in Industrial Process Operations, Nuclear or Military options.

### Graduate Earnings

Recent graduates report an average starting wage of \$22.25 per hour.

### Program Overview:

The program is designed to provide five quarters of common core curriculum for several types of processing operations. Operators must understand and oversee all aspects of process operations facilities, including power-generating facilities, fuel-processing facilities and many other industries. Students will study a wide range of necessary topics to gain this broad understanding of plant operation and maintenance.

In the sixth quarter, specific types of operations will be covered in detail to prepare students for careers in the type of processing plant of their choice. Other types of processing plants include water/wastewater treatment plants, refineries, breweries, food and pharmaceutical manufacturing, steel and concrete manufacturing, and many others.



### Types of jobs available:

- Bio-diesel Production Facility Operator
- Biofuels Production Facility Operator
- Coal-Fired Power Plant Operator
- Combined Cycle Power Plant Operator
- Heating-Cooling Plant Operator
- Hydroelectric Power Plant Operator
- Nuclear Power Plant Operator
- Pipeline Operator
- Process Plant Operator
- Refinery Operator
- Solar Power Plant Operator
- Water/Wastewater Treatment Plant Operator
- Wind Turbine Farm Operator
- Wind Turbine Technician

### Certifications offered in Nuclear Uniform Curriculum Program



*"SCC-Milford changed my life. The degree from the Energy Generation Operations program impacted my professional career significantly!"*

*I am now employed by a great company and love my career!*

*Thank you John and the entire team for putting this program together!"*

*Vicki Lintt, System Operations Analyst  
Black Hills Corporation, Rapid City, SD*

*"LES appreciates the foresight at SCC that drove investing the time and resources to bring the Energy Generation Operations program online. Having a local program that Nebraska utilities can help mold to fit their specific needs is a valuable resource that LES is proud to be a part of. The desire to source locally-educated and skilled operations staff for our generation facilities has been met by SCC with this program."*

*Brian McReynolds, Director  
Generation Operations, Lincoln Electric System*

**John Pierce - CET, Program Chair**

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**or the Campus Admissions Office**

Milford 402-761-8243, 800-933-7223 ext. 8243

### Quarter 1 (Summer/Winter)

		Credits	Delivery
ENER1100	Intro to Energy Generation & Distribution	4.5	F2F
ENER1110**	Operator Safety	5.0	F2F
BSAD1010	Computer class (BSAD1010 or INFO1010)	4.5	OL, F2F
MATH1050**	Thinking Mathematically (or higher)	4.5	OL, F2F

**Total 1st Quarter 18.5**

### Quarter 2 (Spring/Fall)

ENER1115**	Mechanical & Fluid Fundamentals	4.5	HY
ENER1230	Data Acquisition and Control (SCADA)	1.0	OL
ENER1235	Technical Diagrams	4.5	F2F
PHYS1017**	or PHYS1150 or PHYS1410 (or higher)	4.5	F2F
ENGL1010	English Composition I	4.5	OL, F2F

**Total 2nd Quarter 19.0**

### Quarter 3 (Summer/Winter)

ENER1210**	Electrical Power Theory	5.0	F2F
ENER1255**	Instrumentation & Control Systems	6.0	F2F
ENER2530	Process Plant Chemistry	3.0	HY
SPEECH	Any SPCH class	4.5	OL, F2F

**Total 3rd Quarter 18.5**

### Quarter 4 (Spring/Fall)

ENER1220**	Process Dynamics	4.5	F2F
ENER2100**	Motor Controls and Switchgear	4.5	F2F
ENER2105**	Boiler Systems	4.0	HY
ENER2120**	Steam Turbines	3.0	HY
CHOOSE	1 Humanities or 1 Social Science. (See Program Advisor)	4.5	OL, F2F

**Total 4th quarter 20.5**

### Quarter 5 (Summer/Winter)

ENER1250**	Emission Control Systems (1st 7 weeks)	3.0	OL
ENER1900	Internship (off campus last 3 weeks)	3.0	OC
ENER2110**	Backup Power Generation (1st 7 weeks)	3.0	OL
ENER2130	Green Energy Technologies (1st 7 weeks)	4.5	HY
ENER2440	Pipeline Operations (1st 7 weeks)	3.0	HY
ACFS2020	Career Development (1st 5 weeks)	2.5	F2F

**Total 5th Quarter 19.0**

**Total Core Quarter Credits 95.5**

### Quarter 6 (Spring/Fall)

#### Nuclear Focus

ENER2135**	Atomic Structures	5.5	F2F
ENER2205**	Intro to Nuclear Power and Plant Layout	5.0	HY
ENER2220**	Reactor Plant Materials	3.0	HY
ENER2230**	Radiation Detection & Protection	3.0	F2F
ENER2240**	Reactor Safety	3.0	OL

**Nuclear 6th Quarter 19.5**

**Nuclear Focus: 115.0**

#### Industrial Process Operations Focus

ENER2300	Coal Plant Operations & Troubleshooting	6.0	OL
ENER2400	Gas Turbine/HRSG Systems	3.0	HY
ENER2500	Biofuels Fundamentals	3.0	HY
ENER2520	Microbial Ecology	3.0	HY
ENER2540	Ethanol Process Operations	4.5	F2F

**Industrial Process Operations 6th Quarter 19.5**

**Industrial Process Operations Focus: 115.0**

#### Military Focus

ENER2099	Military Service Energy Generation Training	30.0-60.0*	
	Technical Electives	22.5-52.5*	
	General Education Requirements	22.5	
	Computer Requirement	4.5	

**Military Focus: 109.5 hours**

\*Depends on Military Training Transcript. The student, with approval of the program chair, will complete a set of SCC courses. The student and program chair will select courses that will enhance technical expertise.



### NUCP Certificate

\*\* To receive a Nuclear Uniform Curriculum Program certificate issued by the Cooper Nuclear Station in addition to the AAS Degree, these courses require a grade of 80 percent or above.

### Delivery Method

OL = Online Classes      F2F = Face-to-Face Classes  
 OC = Off-campus  
 HY = Hybrid Classes (online with face-to-face labs)