

Chemical Process Operations

A Technical Certificate Program

PROGRAM DESCRIPTION

The Chemical Process Operations certificate program includes courses that prepare individuals for employment in chemical or related industries. In addition to foundation courses in chemistry and physics, students learn about the industrial environment as it relates to process operations and instrumentation.

APPLICATION PROCEDURE

A student desiring to pursue a certificate in Chemical Process Operations must:

1. Submit the Northeast State Application for Admission to the Office of Admissions and Records.
2. Indicate Chemical Process Operations as the desired major on the Northeast State application form.
3. See a faculty advisor from the Chemical Process Operations program prior to registering for classes.

TYPICAL PROGRAM OF STUDY

Course No.	Course Title	Credit
<u>FALL</u>		
CHEM 1030	Introduction to Chemistry	4
or		
CHEM 1110	General Chemistry I	4
INTC 1010	Quality and Inspection	3
INTC 1030	Industrial Concepts	3
INTC 1041	Equipment I	1
INTC 1042	Equipment II	1
MATH 1100	Intermediate Algebra	3
<u>SPRING</u>		
CHEM 1110	General Chemistry I	4
or		
CHEM 1120	General Chemistry II	4
INTC 1020	Safety in the Workplace	3
INTC 1061	Applied Physical Science	1
INTC 1070	Basic Instrumentation	3
Elective	Technical Elective	2
Total Credit Hours		28

Students must complete learning support deficiencies in English, MATH 0030, and reading, or have appropriate entrance scores.

TYPICAL JOB OPPORTUNITIES

Chemical Operator: Operates chemical manufacturing processes, including startup, troubleshooting, shutdown, and normal operations. Many applications involve the use of state-of-the-art computerized work stations for process control.

INDUSTRY PARTNERS

Northeast State has worked closely with the following industries to develop the Chemical Process Operations program and the curriculum was developed to facilitate the skills, knowledge, and attitudes necessary for success in the industrial setting of process operations.

Eastman Chemical Company
BAE Systems
Nuclear Fuel Services
Domtar

TYPICAL STARTING SALARY

Although beginning salaries may vary depending on individual company policies, the typical starting salary for chemical process operators in the Northeast Tennessee region is between \$15 and \$20 per hour.

PROGRAM COMPETENCIES

The graduate is competent to:

1. Identify and troubleshoot processes and instrumentation commonly found in chemical process operations.
2. Make accurate and precise measurements by identifying instrumentations, terms and symbols, unit conversions, and mechanical, pneumatic, and thermal principles.
3. Demonstrate, perform, and adhere to appropriate OSHA safety standards in the mechanical industry including basic and intermediate rigging methods.

FOR FURTHER INFORMATION CONTACT:

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or

Division of Advanced Technologies
Telephone: 423.279.7639



Approved Courses for General Education

Approved Courses for General Education

Communication

ENGL 1010	Composition I	3
ENGL 1020	Composition II	3
To fulfill Oral Presentational Communication Requirement		
SPCH 1010	Fundamentals of Speech Communication	3
SPCH 2300	Public Speaking	3
SPCH 2320	Argumentation and Debate	3

Humanities and/or Fine Arts:

To fulfill Literature requirement

ENGL 2030	Literary Heritage	3
ENGL 2110	American Literature I	3
ENGL 2120	American Literature II	3
ENGL 2130	American Masterpieces	3
ENGL 2180	Myth and Tradition	3
ENGL 2210	English Literature I	3
ENGL 2220	English Literature II	3
ENGL 2330	World Literature	3

To fulfill Humanities/Fine Arts requirement

ARTH 1030	Introduction to Art	3
ARTH 2010	Survey of Art History I	3
ARTH 2020	Survey of Art History II	3
HUM 2010	Introduction to Humanities I	3
HUM 2020	Introduction to Humanities II	3
HUM 2340	Black Studies	3
HUM 2350	Technology in Society	3
MUS 1030	Music Appreciation	3
PHIL 1030	Self and World	3
PHIL 2020	Values and Society	3
PHIL 2210	Introduction to the Study of Religion	3
THEA 1030	Introduction to Theatre	3
THEA 2010	Theatre History I	3
THEA 2020	Theatre History II	3

Behavioral and Social Sciences

To fulfill Behavioral and Social Sciences requirement

ECON 1050	Economics and Society	3
ECON 2010	Macroeconomics	3
ECON 2020	Microeconomics	3
GEOG 1030	Cultural Geography	3
GEOG 2010	World Geography	3
POLS 1030	American Government	3
POLS 2210	Comparative World Politics	3
PSYC 1030	General Psychology	3
PSYC 2130	Life Span Psychology	3
SOCI 1010	Introduction to Sociology	3
SOCI 1020	Social Problems	3
SOCI 1030	Introduction to Anthropology	3
SOCI 2010	Marriage and Family	3
SOCW 2010	Fitness, Wellness, and Society	3
WMST 2010	Introduction to Women's Studies	3

Approved Courses for General Education Continued:

History

To fulfill History requirement

HIST 1210	World History I	3
HIST 1220	World History II	3
HIST 2010	U.S. History I	3
HIST 2020	U.S. History II	3
HIST 2030	Tennessee History	3

Natural Science

To fulfill Natural Science requirement

ASTR 1010	Astronomy I	4
ASTR 1020	Astronomy II	4
BIOL 1010	Introduction to Biology I	4
BIOL 1020	Introduction to Biology II	4
BIOL 1030	Concepts in Biology	4
BIOL 1110	General Biology I (Majors)	4
BIOL 1120	General Biology II (Majors)	4
BIOL 2010	Human Anatomy and Physiology I	4
BIOL 2015	Environmental Science	4
BIOL 2020	Human Anatomy and Physiology II	4
CHEM 1030	Introduction to Chemistry	4
CHEM 1110	General Chemistry I	4
CHEM 1120	General Chemistry II	4
PHYS 1030	Introduction to Physics	4
PHYS 2010	Non-Calculus Based Physics I	4
PHYS 2020	Non-Calculus Based Physics II	4
PHYS 2110	Calculus-Based Physics I	4
PHYS 2120	Calculus-Based Physics II	4
PSCI 1010	Physical Science I (Physics and Chemistry)	4
PSCI 1020	Physical Science II (Earth/Space Science)	4

Mathematics

To fulfill Mathematics requirement

MATH 1010	Mathematical Applications	3
MATH 1410	Foundations of Numerical Concepts (Education Majors Only)	3
MATH 1530	Probability and Statistics (Non-Calculus Based)	3
MATH 1630	Finite Mathematics	3
MATH 1710	Pre-Calculus I (Algebra)	3
MATH 1720	Pre-Calculus II	3
MATH 1830	Calculus for Business	3
MATH 1910	Calculus I	4

Note: Some majors may require specific general education courses. Students and advisors should consult curriculum guides before making general education course selections.

ACADEMIC PLAN FOR CATALOG YEAR 2015-2016
TIMELINE FOR DEGREE COMPLETION

Semester:	Cr Hrs
Total Credit Hrs	

Semester:	Cr Hrs
Total Credit Hrs	

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Total Credit Hrs	

Semester:	Cr Hrs
Total Credit Hrs	

Student Signature

Date

Academic Advisor Signature

Date



NORTHEAST STATE

We're here to get you there

Meeting Dates:

This academic plan is an unofficial document intended to be used for advising/course planning only. This document cannot be used to supersede or waive requirements listed in the Northeast State Community College Catalog. Course availability is not guaranteed.

Northeast State Community College is part of the Tennessee Board of Regents system, the nation's sixth largest higher education system, governing 46 post-secondary educational institutions. The TBR system includes six universities, 13 two-year colleges and 27 technology centers, providing programs in 90 of Tennessee's 95 counties to more than 200,000 students.

Northeast State Community College does not discriminate against students, employees or applicants for admission or employment on the basis of race, color, religion, creed, ethnic national origin, sex, sexual orientation, gender identity/ expression, disability, age, status as a covered veteran, genetic information or any other legally protected class with respect to all employment, programs and activities. The following person has been designated to handle inquiries regarding the non-discrimination policies: Dr. Leigh Hornsby, Equity & Compliance Officer/Chief Advancement Officer, P.O. Box 246, Blountville, TN 37617-0246, 423.354.5255, complianceofficer@NortheastState.edu. Northeast State Community College's policy on nondiscrimination can be found at <http://cwis.northeaststate.edu/oie/policymannual/pol.asp?p=254>.

Northeast State is accredited by the Southern Association of Colleges and Schools Commission on Colleges to award the associate degree. Contact the Commission on Colleges at 1866 Southern Lane, Decatur, Georgia 30033-4097 or call 404-679-4500 for questions about the accreditation of Northeast State.