

Division of Advanced Technologies

Machine Tool Operations

A Technical Certificate Program

PROGRAM DESCRIPTION

The Machine Tool Operations certificate program prepares individuals as machinists capable of reading blueprints and operating precision measuring instruments, metal turning lathes, milling machines, and computer numerical control (CNC) equipment.

PROGRAM ARTICULATION

All courses in the Machine Tool Operations certificate program will articulate into the Associate of Applied Science degree program in Industrial Technology - Concentration: Machine Tool.

The Machine Tool Operations certificate is accredited by the National Institute for Metalworking Skills, Inc., (NIMS).

10565 Fairfax Boulevard, Suite 10
Fairfax, VA 22030
Telephone: 703.352.4971

APPLICATION PROCEDURE

A student desiring to pursue a certificate in Machine Tool Operations must:

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



TYPICAL PROGRAM OF STUDY

Course No.	Course Title	Credit
FALL		
INTC 1010	Quality and Inspection	3
MATH 1050	Trigonometric Applications	4
MATT 1110	Machine Tool Operations I	4
MATT 1510	Blueprint Reading for the Machine Trades	3
SPRING		
INTC 1020	Safety in the Workplace	3
MATT 1120	Machine Tool Operations II	4
MFGT 2310	CNC Programming I	3
FALL		
MATT 2130	Machine Tool Operations III	4
MFGT 2320	CNC Machine Operations I	3
Total Credit Hours		31

Students must complete all learning support deficiencies in English and MATH 0050, or have appropriate entrance scores.

TYPICAL JOB OPPORTUNITIES

Machine Set Up Operator: Sets up machine tools in a manufacturing environment.

Machinist: Sets up and operates machine tools, and produces parts to print specifications.

CNC Programmer/Operator: Sets up, programs, and operates CNC equipment.

PROGRAM COMPETENCIES

The graduate is competent to:

1. Design and identify machine requirements and manufacture a successful industry standard component.
2. Identify and write basic computer numerical control (CNC) for CNC, as well as CNC, 2D, and 3D path codes to control CNC equipment.
3. Identify, analyze, and manipulate measuring instruments to obtain accurate and precise measurements of machine tool parts and components.
4. Set-up and perform turning, milling, and grinding operations found in a modern manufacturing environment.
5. Adhere to and explain appropriate OSHA safety standards relative to related business and industry.

FOR FURTHER INFORMATION CONTACT:

Brad Stufflestreet
Instructor, Machine Tool/Manufacturing
Engineering Technology
Telephone: 423.354.5195
bastufflestreet@NortheastState.edu

or

Keith Tittle
Interim Assistant Dean, Advanced Technologies
Telephone: 423.354.2582
gktittle@NortheastState.edu



Approved Courses for General Education

Approved Courses for General Education

Communication

ENGL 1010	English Composition I	3
ENGL 1020	English Composition II	3
To fulfill Oral Presentational Communication Requirement		
COMM 2025	Fundamentals of Communication	3
COMM 2045	Public Speaking	3
COMM 2055	Argumentation and Debate	3

Humanities and/or Fine Arts:

To fulfill Literature requirement

ENGL 2045	Introduction to Literature	3
ENGL 2110	Early American Literature	3
ENGL 2120	Modern American Literature	3
ENGL 2130	Topics in American Literature	3
ENGL 2160	Mythology	3
ENGL 2210	Early British Literature	3
ENGL 2220	Modern British Literature	3
ENGL 2330	Topics in World Literature	3

To fulfill Humanities/Fine Arts requirement

ART 1035	Introduction to Art	3
ART 2000	Art History Survey I	3
ART 2020	Art History Survey II	3
HUM 1010	Early Humanities	3
HUM 1020	Modern Humanities	3
HUM 2340	Black Studies	3
HUM 2350	Technology in Society	3
MUS 1030	Introduction to Music	3
PHIL 1030	Introduction to Philosophy	3
PHIL 1040	Introduction to Ethics	3
PHIL 2200	Introduction World Religions	3
PHIL 2640	Science and the Modern World	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

ANTH 1230	Introduction to Cultural Anthropology	3
ECON 1050	Economics and Society	3
ECON 2100	Principles of Macroeconomics	3
ECON 2200	Principles of Microeconomics	3
GEOG 1012	Cultural Geography	3
GEOG 2010	World Regional Geography	3
MCOM 1110	Media and Social Institutions	3
POLS 1030	American Government	3
POLS 2050	Comparative World Politics	3
PSYC 1030	Introduction to Psychology	3
PSYC 2130	Lifespan Development Psychology	3
SOCI 1010	Introduction to Sociology	3
SOCI 1040	Social Problems	3
SOCI 2010	Marriage and Family	3
SOCW 2010	Fitness, Wellness, and Society	3
SRVL 1020	Introduction to Service Learning	3
WGST 2050	Introduction to Women/Gender Studies	3

Approved Courses for General Education Continued:

History

To fulfill History requirement

HIST 2010	Early United States History	3
HIST 2020	Modern United States History	3
HIST 2030	Tennessee History	3
HIST 2310	Early World History	3
HIST 2320	Modern World History	3

Natural Science

To fulfill Natural Science requirement

ASTR 1010	Solar System Astronomy	4
ASTR 1020	Stars & Galaxies Astronomy	4
BIOL 1010	Introduction to Biology	4
BIOL 1020	Diversity in Life	4
BIOL 1080	Concepts in Biology	4
BIOL 1110	General Biology I	4
BIOL 1120	General Biology II	4
BIOL 1510	Environmental Science I	4
BIOL 2010	Human Anatomy and Physiology I	4
BIOL 2020	Human Anatomy and Physiology II	4
CHEM 1060	Survey of Chemistry	4
CHEM 1110	General Chemistry I	4
CHEM 1120	General Chemistry II	4
PHYS 1030	Survey of Physics	4
PHYS 2010	Non-Calculus Physics I	4
PHYS 2020	Non-Calculus Physics II	4
PHYS 2110	Calculus-Based Physics I	4
PHYS 2120	Calculus-Based Physics II	4
PSCI 1010	Principles of Physical Science	4
PSCI 1020	Principles of Earth/Space	4

Mathematics

To fulfill Mathematics requirement

MATH 1010	Math for General Studies	3
MATH 1410	Number Concepts for Teachers (Education Majors Only)	3
MATH 1530	Introductory Statistics	3
MATH 1630	Finite Mathematics	3
MATH 1710	Pre-calculus Algebra	3
MATH 1720	Pre-calculus Trigonometry	3
MATH 1830	Applied Calculus	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 2018-2019
TIMELINE FOR DEGREE COMPLETION

Semester:	Cr Hrs
Total Credit Hrs	

Semester:	Cr Hrs
Total Credit Hrs	

Semester:	Cr Hrs
Total Credit Hrs	

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Total Credit Hrs	

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Total Credit Hrs	

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Total Credit Hrs	

Semester:	Cr Hrs
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.