



Machining Technology
Credential: Certificate in Machining Technology
C50300

The Machining Technology curriculum is designed to develop skills in the theory and safe use of hand tools, power machinery, computerized equipment and sophisticated precision inspection instruments. Students will learn to interpret blueprints, set up manual and Computer Numerical Controllers (CNC) machines, perform basic machining operations and make decisions to insure that work quality is maintained. Employment opportunities for machining technicians exist in manufacturing industries, public institutions, governmental agencies, and in a wide range of specialty machining job shops.

Program Length: 2 semesters

Career Pathway Options: Associate in Applied Science in Machining Technology with a Concentration in Tool, Die and Mold Making (Higher entrance standards required); Diploma in Machining Technology (Higher entrance standards required); Certificate in Machining Technology

Program Sites:

Lee Campus - Evening Program
 Harnett Campus - Evening Program

Course Requirements for Machining Technology Certificate

A. Required Major Core Courses (16 SHC) C-L-SHC
 MAC 111 Machining Technology I 2-12-6

Required Subject Areas

BPR 111	Blueprint Reading	1-2-2
BPR 121	Blueprint Reading: Mechanical	1-2-2
ISC 110	Workplace Safety	1-0-1
MAC 121	Introduction to CNC	2-0-2
MEC 141	Intro to Manufacturing Processes	2-2-3

Total Semester Hours Credit required for graduation: 16

Semester Curriculum for Machining Technology Certificate

1st Semester (Fall)		C-L-SHC
BPR 111	Blueprint Reading	1-2-2
ISC 110	Workplace Safety	1-0-1
MAC 111A	Machining Technology IA	1-6-3
MAC 121	Introduction to CNC	2-0-2
MEC 141	Intro to Manufacturing Processes	2-2-3
		7-10-11
2nd Semester (Spring)		
BPR 121	Blueprint Reading: Mechanical	1-2-2
MAC 111B	Machining Technology IB	1-6-3
		2-8-5

Total Semester Hours Credit: 16

COURSE DESCRIPTIONS

BPR 111 Blueprint Reading 1-2-2
 This course introduces the basic principles of blueprint reading. Topics include line types, orthographic projections, dimensioning methods, and notes. Upon completion, students should be able to interpret basic blueprints and visualize the features of a part.

BPR 121 Blueprint Reading: Mechanical 1-2-2
Prerequisites: BPR 111 or MAC 131
 This course covers the interpretation of intermediate blueprints. Topics include tolerancing, auxiliary views, sectional views, and assembly drawings. Upon completion, students should be able to read and interpret a mechanical working drawing.

ISC 110 Workplace Safety 1-0-1
 This course introduces the basic concepts of workplace safety. Topics include fire, ladders, lifting, lock-out/tag-out, personal protective devices, and other workplace safety issues related to OSHA compliance. Upon completion, students should be able to demonstrate an understanding of the components of a safe workplace.

MAC 111 Machining Technology I 2-12-6
 This course introduces machining operations as they relate to the metalworking industry. Topics include machine shop safety, measuring tools, lathes, drilling machines, saws, milling machines, bench grinders, and layout instruments. Upon completion, students should be able to safely perform the basic operations of measuring, layout, drilling, sawing, turning, and milling.

MAC 121 Introduction to CNC 2-0-2
 This course introduces the concepts and capabilities of computer numerical control machine tools. Topics include setup, operation, and basic applications. Upon completion, students should be able to explain operator safety, machine protection, data input, program preparation, and program storage.

MEC 141 Introduction Mfg Processes 2-2-3
 This course covers the properties and characteristics of manufacturing materials and the processes used to form them. Emphasis is placed on manufacturing materials, heat-treating processes, and manufacturing processes. Upon completion, students should be able to identify physical characteristics of materials and describe processes used to manufacture a part.