

CURRICULUM STANDARD

Effective Term
Spring 2005
[2005*01]

Curriculum Program Title

Mechanical Engineering Technology

Code

A40320

Concentration

(not applicable)

Curriculum Description

The Mechanical Engineering Technology curriculum prepares graduates for employment as technicians in the diversified mechanical and manufacturing engineering fields. Mechanical Engineering technicians assist in design, development, testing, process design and improvement, and troubleshooting and repair of engineered systems. Emphasis is placed on the integration of theory and hands-on application of engineering principles.

In addition to course work in engineering graphics, engineering fundamentals, materials and manufacturing processes, mathematics, and physics, students will study computer applications, critical thinking, planning and problem solving, and oral and written communications.

Graduates of the curriculum will find employment opportunities in the manufacturing or service sectors of engineering technology. Engineering technicians may obtain professional certification by application to organizations such as ASQC, SME, and NICET.

*Curriculum Requirements**

[for associate degree, diploma, and certificate programs in accordance with 23 NCAC 02E.0204 (3)]

- I. General Education.** Degree programs must contain a minimum of 15 semester hours including at least one course from each of the following areas: humanities/fine arts, social/behavioral sciences, and natural sciences/mathematics. Degree programs must contain a minimum of 6 semester hours of communications. Diploma programs must contain a minimum of 6 semester hours of general education; 3 semester hours must be in communications. General education is optional in certificate programs.
- II. Major Hours.** AAS, diploma, and certificate programs must include courses which offer specific job knowledge and skills. Work experience, including cooperative education, practicums, and internships, may be included in associate in applied science degrees up to a maximum of 8 semester hours of credit; in diploma programs up to a maximum of 4 semester hours of credit; and in certificate programs up to a maximum of 2 semester hours of credit. *(See second page for additional information.)*
- III. Other Required Hours.** A college may include courses to meet graduation or local employer requirements in a certificate, diploma, or associate in applied science program. These curriculum courses shall be selected from the Combined Course Library and must be approved by the System Office prior to implementation. Restricted, unique, or free elective courses may not be included as other required hours.

	AAS	Diploma	Certificate
Minimum General Education Hours	15	6	0
Minimum Major Hours	49	30	12
Other Required Hours	0-7	0-4	0-1
Total Semester Hours Credit (SHC)	64-76	36-48	12-18

**Within the degree program, the institution shall include opportunities for the achievement of competence in reading, writing, oral communication, fundamental mathematical skills, and basic use of computers.*

Major Hours

[ref. 23 NCAC 02E.0204 (3)]

- A. Core.** The subject/course core is comprised of subject areas and/or specific courses which are required for each curriculum program. A diploma program offered under an approved AAS program standard or a certificate which is the highest credential level awarded under an approved AAS program standard must include a minimum of 12 semester hours credit derived from the subject/course core of the AAS program.
- B. Concentration** (if applicable). A concentration of study must include a minimum of 12 semester hours credit from required subjects and/or courses. The majority of the course credit hours are unique to the concentration. The required subjects and/or courses that make up the concentration of study are in addition to the required subject/course core.
- C. Other Major Hours.** Other major hours must be selected from prefixes listed on the curriculum standard. A maximum of 9 semester hours of credit may be selected from any prefix listed, with the exception of prefixes listed in the core or concentration. Work experience, including cooperative education, practicums, and internships, may be included in associate in applied science degrees up to a maximum of 8 semester hours of credit; in diploma programs up to a maximum of 4 semester hours of credit; and in certificate programs up to a maximum of 2 semester hours of credit.

Mechanical Engineering Technology A40320

	AAS	Diploma	Certificate
Minimum Major Hours Required	49 SHC	30 SHC	12 SHC
A. CORE	17-21 SHC	NR	
Required Courses:			
Required Subject Areas:			
Engineering Graphics. Select one:			
DFT 119 Basic CAD	2 SHC		
DFT 151 CAD I	3 SHC		
DFT 154 Intro Solid Modeling	3 SHC		
DFT 170 Engineering Graphics	3 SHC		
EGR 120 Eng and Design Graphics	3 SHC		
Engineering Fundamentals. Select 10-12 SHC:			
ATR 112 Intro to Automation	3 SHC		
DDF 211 Design Process I	4 SHC		
DFT 152 CAD II	3 SHC		
ELC 111 Intro to Electricity	3 SHC or		
ELC 131 DC / AC Circuit Analysis	5 SHC		
ISC 112 Industrial Safety	2 SHC or		
ISC 121 Envir Health & Safety	3 SHC		
ISC 132 Mfg Quality Control	3 SHC		
HYD 110 Hydraulics / Pneumatics I	3 SHC or		
MEC 265 Fluid Mechanics	3 SHC		
CIV 110 Statics / Strength of Materials	4 SHC or		
MEC 210 Applied Mechanics	3 SHC or		
MEC 250 Statics & Strength of Materials	5 SHC or		
MEC 251 Statics	3 SHC		
<i>Continued on next page</i>			

Mechanical Engineering Technology A40320 (continued)

Materials and Manufacturing Processes. Select 5-6 SHC:

MAC 114	Intro to Metrology	2 SHC
MEC 111	Machine Processes I	3 SHC
MEC 145	Mfg Materials I	3 SHC
MEC 161	Manufacturing Processes I	3 SHC
MEC 180	Engineering Materials	3 SHC
MEC 231	Comp-Aided Manufact I	3 SHC
PLA 110	Introduction to Plastics	2 SHC

B. CONCENTRATION *(Not applicable)*

C. OTHER MAJOR HOURS

To be selected from the following prefixes:

ATR, BPR, BUS, CET, CHM, CIS, CIV, COE, CSC, DDF, DEA, DFT, EGR, ELC, ELN, FSD, HYD, INT, ISC, LEO, MAC, MAT, MEC, MNT, NET, NOS, OMT, PCI, PHY, PLA, PPT, PTC, TEX, TNE, and WLD

Foreign language courses (including ASL) that are not designated as approved other major hours may be included in all programs up to a maximum of 3 semester hours of credit.