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			

Continued on next page

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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:

ARC, 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.

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