

Curriculum Program Title

Machining Technology

Code

A5030A

Concentration

Tool, Die, and Mold Making

Curriculum Description

Tool, Die, and Mold Making is a concentration under the curriculum title of Machining Technology. This curriculum is designed to develop skills in the use of hand tools, computerized equipment, and precision instruments for machine tooling used for the mass production of parts.

Students will learn to interpret blueprints, set up manual and CNC machines, and perform basic and advanced machining operations. Emphasis will be placed on the production of tooling used for punching, stamping, and molding of parts.

Graduates should qualify for employment opportunities in manufacturing industries and tool, die, and mold making industries.

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.*

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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.

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	AAS	Diploma	Certificate
Minimum Major Hours Required	49 SHC	30 SHC	12 SHC
A. CORE <i>Courses required for the diploma are designated with *</i> Required Courses: * MAC 111 Machining Technology I 6 SHC * MAC 112 Machining Technology II 6 SHC * MAC 113 Machining Technology III 6 SHC Required Subject Areas: * Blueprint Reading. Select 4 SHC: BPR 111 Blueprint Reading 2 SHC <i>or</i> MAC 131 Blueprint Reading: Machining I 2 SHC BPR 121 Blueprint Reading: Mechanical 2 SHC <i>or</i> MAC 132 Blueprint Reading: Machining II 2 SHC * CNC. Select 4 SHC: MAC 121 Introduction to CNC 2 SHC MAC 122 CNC Turning 2 SHC MAC 124 CNC Milling 2 SHC MAC 126 CNC Metal Fabrication 2 SHC MAC 222 Advanced CNC Turning 2 SHC MAC 224 Advanced CNC Milling 2 SHC MAC 226 CNC EDM Machining 2 SHC MAC 229 CNC Programming 2 SHC	26 SHC	26 SHC	
B. CONCENTRATION <i>Courses unique to the concentration are designated with **</i> ** MAC 153 Compound Angles 2 SHC MAC 243 Die Making I 4 SHC ** MAC 244 Die Making II 4 SHC MAC 245 Mold Construction I 4 SHC ** MAC 246 Mold Construction II 4 SHC <div style="text-align: right;"><i>Continued on next page</i></div>	18 SHC		

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C. OTHER MAJOR HOURS <i>To be selected from the following prefixes:</i> BPR, BUS, CIS, COE, CSC, DFT, HYD, ISC, MAC, MEC, OMT, PLA, and WLD <i>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.</i>			