

# CURRICULUM STANDARD

Effective Term  
Spring 2008  
[2008\*01]

Curriculum Program Title

**Machining Technology**

Code

**A50300**

Concentration

**(not applicable)**

## ***Curriculum Description***

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 CNC machines, perform basic and advanced machining operations, and make decisions to ensure 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.

## ***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.

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

*\*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.

## Machining Technology A50300

	AAS	Diploma	Certificate																																																																										
<b>Minimum Major Hours Required</b>	<b>49 SHC</b>	<b>30 SHC</b>	<b>12 SHC</b>																																																																										
<p><b>A. CORE</b>  <i>Courses required for the diploma are designated with *</i></p> <p><b>Required Courses:</b></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 5%;">*</td> <td style="width: 15%;">MAC 111</td> <td style="width: 40%;">Machining Technology I</td> <td style="width: 40%; text-align: right;">6 SHC</td> </tr> <tr> <td>*</td> <td>MAC 112</td> <td>Machining Technology II</td> <td style="text-align: right;">6 SHC</td> </tr> <tr> <td>*</td> <td>MAC 113</td> <td>Machining Technology III</td> <td style="text-align: right;">6 SHC</td> </tr> </table> <p><b>Required Subject Areas:</b></p> <p>* <b>Blueprint Reading. Select 4 SHC:</b></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 5%;"></td> <td style="width: 15%;">BPR 111</td> <td style="width: 40%;">Blueprint Reading</td> <td style="width: 40%; text-align: right;">2 SHC</td> <td style="width: 10%; text-align: center;"><i>or</i></td> </tr> <tr> <td></td> <td>MAC 131</td> <td>Blueprint Reading: Machining I</td> <td style="text-align: right;">2 SHC</td> <td></td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;"><i>and</i></td> <td></td> <td></td> </tr> <tr> <td></td> <td>BPR 121</td> <td>Blueprint Reading: Mechanical</td> <td style="text-align: right;">2 SHC</td> <td style="text-align: center;"><i>or</i></td> </tr> <tr> <td></td> <td>MAC 132</td> <td>Blueprint Reading: Machining II</td> <td style="text-align: right;">2 SHC</td> <td style="text-align: center;"><i>or</i></td> </tr> <tr> <td></td> <td>DFT 119</td> <td>Basic CAD</td> <td style="text-align: right;">2 SHC</td> <td></td> </tr> </table> <p>* <b>CNC. Select 4 SHC:</b></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 5%;"></td> <td style="width: 15%;">MAC 121</td> <td style="width: 40%;">Introduction to CNC</td> <td style="width: 40%; text-align: right;">2 SHC</td> </tr> <tr> <td></td> <td>MAC 122</td> <td>CNC Turning</td> <td style="text-align: right;">2 SHC</td> </tr> <tr> <td></td> <td>MAC 124</td> <td>CNC Milling</td> <td style="text-align: right;">2 SHC</td> </tr> <tr> <td></td> <td>MAC 126</td> <td>CNC Metal Fabrication</td> <td style="text-align: right;">2 SHC</td> </tr> <tr> <td></td> <td>MAC 222</td> <td>Advanced CNC Turning</td> <td style="text-align: right;">2 SHC</td> </tr> <tr> <td></td> <td>MAC 224</td> <td>Advanced CNC Milling</td> <td style="text-align: right;">2 SHC</td> </tr> <tr> <td></td> <td>MAC 226</td> <td>CNC EDM Machining</td> <td style="text-align: right;">2 SHC</td> </tr> <tr> <td></td> <td>MAC 229</td> <td>CNC Programming</td> <td style="text-align: right;">2 SHC</td> </tr> </table>	*	MAC 111	Machining Technology I	6 SHC	*	MAC 112	Machining Technology II	6 SHC	*	MAC 113	Machining Technology III	6 SHC		BPR 111	Blueprint Reading	2 SHC	<i>or</i>		MAC 131	Blueprint Reading: Machining I	2 SHC				<i>and</i>				BPR 121	Blueprint Reading: Mechanical	2 SHC	<i>or</i>		MAC 132	Blueprint Reading: Machining II	2 SHC	<i>or</i>		DFT 119	Basic CAD	2 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	<b>26 SHC</b>	<b>26 SHC</b>	
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<p><b>C. OTHER MAJOR HOURS</b>  <i>To be selected from the following prefixes:</i></p> <p>ATR, BPR, BUS, CIS, COE, CSC, DFT, EGR, HYD, ISC, MAC, MEC, OMT, PLA, and WLD</p> <p><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></p>																																																																													