

## PROGRAMS

### COMPUTER-INTEGRATED MACHINING

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The Computer-Integrated Machining curriculum prepares students with the analytical, creative and innovative skills necessary to take a production idea from an initial concept through design, development, and production, resulting in a finished product.

Coursework may include manual machining, computer applications, computer-aided machining (CAM), blueprint interpretation, advanced computerized numeric control (CNC) equipment, basic and advanced machining operations, and precision.

Graduates should qualify for employment as machining technicians in high-tech manufacturing, rapid prototyping and rapid-manufacturing industries, specialty machine shops, fabrication industries, and high-tech or emerging industries such as aerospace, aviation, medical, and renewable energy, and to sit for machining certification examinations.

#### Learning Outcomes

Upon completion of this program, students will be able to:

- The student will be able to interpret blueprints
- The student will be able to create a working assembly of manufactured parts
- The student will be able to apply general principles of mathematics and programming to CNC machine programming and CNC graphics programming
- The student will be able to setup and operate a CNC machine

#### Accreditation

The Stanly Community College Computer Integrated Machining Program is accredited by the National Institute for Metalworking Skills

([www.nims-skills.org](http://www.nims-skills.org)) NIMS is based on industry-written and industry-approved standards. The accredited program demonstrates the ability to produce skilled individuals for workforce needs.

National Institute for Metalworking Skills

10565 Fairfax Boulevard, Suite 10

Fairfax, VA 22030



#### Computer-Integrated Machining Degree – A50210

First Year		
Fall		Credit Hours
ACA 111	College Student Success	1
CIS 110	Introduction to Computers	3

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ENG 111	Writing and Inquiry	3
MAC 114	Introduction to Metrology	2
MAC 131	Blueprint Reading-Machining I	2
MAC 141	Machining Applications I	4
	Credit Hours	15
<b>Spring</b>		<b>Credit Hours</b>
DFT 151	CAD I	3
ISC 112	Industrial Safety	2
MAC 121	Introduction to CNC	2
MAC 142	Machining Applications II	4
MAC 152	Advanced Machining Calculations	2
MAC 247	Production Tooling	2
MAT 110	Mathematical Measurement and Literacy	3
	Credit Hours	18
<b>Summer</b>		<b>Credit Hours</b>
MAC 231	Cam: Computer Numerical Control Turning	3
MAC 232	CAM: Computer Numerical Control Milling	3
	Credit Hours	6
<b>Second Year</b>		
<b>Fall</b>		<b>Credit Hours</b>
ACA 121	Managing a Team	1
MAC 122	CNC Turning	2
MAC 124	CNC Milling	2
MAC 143	Machining Applications III	4
MAC 241	Jigs & Fixtures I	4
Social Science elective*		3
	Credit Hours	16
<b>Spring</b>		<b>Credit Hours</b>
ENG 112 or ENG 114	Writing and Research in the Disciplines Professional Research & Reporting	3
MAC 222	Advanced CNC Turning	2
MAC 224	Advanced CNC Milling	2
MAC 228	Advanced CNC Processes	3
WBL 110 or WBL 111	World of Work Work-Based Learning I	1
Humanities elective*		3
	Credit Hours	14
	Total Credit Hours	69

### Computer-Integrated Machining Part-time Pathway

Term 1	Credit Hours
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ACA 111	College Student Success	1
MAC 131	Blueprint Reading-Machining I	2
MAC 141	Machining Applications I	4
	Credit Hours	7
<b>Term 2</b>		<b>Credit Hours</b>
DFT 151	CAD I	3
MAC 121	Introduction to CNC	2
MAC 142	Machining Applications II	4
MAC 247	Production Tooling	2
	Credit Hours	11
<b>Term 3</b>		<b>Credit Hours</b>
MAC 231	Cam: Computer Numerical Control Turning	3
MAC 232	CAM: Computer Numerical Control Milling	3
	Credit Hours	6
<b>Term 4</b>		<b>Credit Hours</b>
CIS 110	Introduction to Computers	3
ENG 111	Writing and Inquiry	3
MAC 114	Introduction to Metrology	2
	Credit Hours	8
<b>Term 5</b>		<b>Credit Hours</b>
ISC 112	Industrial Safety	2
MAC 152	Advanced Machining Calculations	2
MAT 110	Mathematical Measurement and Literacy	3
	Credit Hours	7
<b>Term 6</b>		<b>Credit Hours</b>
MAC 241	Jigs & Fixtures I	4
Social Science Elective*		3
	Credit Hours	7
<b>Term 7</b>		<b>Credit Hours</b>
ACA 121	Managing a Team	1
MAC 122	CNC Turning	2
MAC 124	CNC Milling	2
	Credit Hours	5
<b>Term 8</b>		<b>Credit Hours</b>
MAC 222	Advanced CNC Turning	2
MAC 224	Advanced CNC Milling	2
WBL 110 or WBL 111	World of Work Work-Based Learning I	1
	Credit Hours	5
<b>Term 9</b>		<b>Credit Hours</b>

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ENG 114	Professional Research & Reporting	3
MAC 143	Machining Applications III	4
	Credit Hours	7
<b>Term 10</b>		<b>Credit Hours</b>
MAC 228	Advanced CNC Processes	3
Humanities Elective*		3
	Credit Hours	6
	Total Credit Hours	69

**Computer-Integrated Machining Diploma - D50210**

<b>First Year</b>		
<b>Fall</b>		<b>Credit Hours</b>
ACA 111	College Student Success	1
CIS 110	Introduction to Computers	3
MAC 131	Blueprint Reading-Machining I	2
MAC 141	Machining Applications I	4
	Credit Hours	10
<b>Spring</b>		<b>Credit Hours</b>
DFT 151	CAD I	3
MAC 121	Introduction to CNC	2
MAC 142	Machining Applications II	4
MAC 152	Advanced Machining Calculations	2
MAC 247	Production Tooling	2
MAT 110	Mathematical Measurement and Literacy	3
	Credit Hours	16
<b>Summer</b>		<b>Credit Hours</b>
MAC 231	Cam: Computer Numerical Control Turning	3
MAC 232	CAM: Computer Numerical Control Milling	3
	Credit Hours	6
<b>Second Year</b>		
<b>Fall</b>		<b>Credit Hours</b>
ENG 111	Writing and Inquiry	3
MAC 122	CNC Turning	2
MAC 124	CNC Milling	2
MAC 143	Machining Applications III	4
	Credit Hours	11
	Total Credit Hours	43

**Computer-Integrated Machining - CNC Turning & Milling Certificate - C50210C**

<b>First Year</b>		
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<b>Fall</b>		<b>Credit Hours</b>
MAC 114	Introduction to Metrology	2
MAC 122	CNC Turning	2
MAC 124	CNC Milling	2
MAC 131	Blueprint Reading-Machining I	2
	Credit Hours	8
<b>Spring</b>		<b>Credit Hours</b>
MAC 222	Advanced CNC Turning	2
MAC 224	Advanced CNC Milling	2
	Credit Hours	4
<b>Summer</b>		<b>Credit Hours</b>
MAC 231	Cam: Computer Numerical Control Turning	3
MAC 232	CAM: Computer Numerical Control Milling	3
	Credit Hours	6
	Total Credit Hours	18

**Computer-Integrated Machining – Manual Machining Certificate – C50210M**

<b>First Year</b>		
<b>Fall</b>		<b>Credit Hours</b>
MAC 114	Introduction to Metrology	2
MAC 131	Blueprint Reading-Machining I	2
MAC 141	Machining Applications I	4
	Credit Hours	8
<b>Spring</b>		<b>Credit Hours</b>
MAC 142	Machining Applications II	4
MAC 152	Advanced Machining Calculations	2
MAC 247	Production Tooling	2
	Credit Hours	8
	Total Credit Hours	16

**Computer-Integrated Machining – Manual/CNC Machine Operator Certificate – C50210MC**

<b>First Year</b>		
<b>Fall</b>		<b>Credit Hours</b>
MAC 121	Introduction to CNC	2
MAC 141	Machining Applications I	4
	Credit Hours	6
<b>Spring</b>		<b>Credit Hours</b>
MAC 124	CNC Milling	2
MAC 142	Machining Applications II	4
	Credit Hours	6

## Programs

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<b>Summer</b>		<b>Credit Hours</b>
MAC 122	CNC Turning	2
	Credit Hours	2
	Total Credit Hours	14

### Computer-Integrated Machining - CCP

<b>Courses</b>		<b>Credit Hours</b>
MAC 121	Introduction to CNC	2
MAC 131	Blueprint Reading-Machining I	2
MAC 141	Machining Applications I	4
MAC 142	Machining Applications II	4
MAC 143	Machining Applications III	4
MAC 152	Advanced Machining Calculations	2
	Total Credit Hours	18