

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
- Computer-Integrated Machining - Associate in Applied Science (p. 1)
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- Computer-Integrated Machining - CNC Turning & Milling Certificate (p. 2)
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Computer-Integrated Machining – Associate in Applied Science – A50210

Course	Title	Credit Hours
First Year		
Fall		
MAC 111	Machining Technology I	6
MAC 114	Introduction to Metrology	2
MAC 151	Machining Calculations	2
MAC 131	Blueprint Reading-Machining I	2
CIS 110	Introduction to Computers	3

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

*Please see the Suggested Humanities and Social/Behavioral Science Elective List for AAS Majors webpage (<http://catalog.stanly.edu/curriculum-programs-study/suggested-humanities-social-science-electives-list-for-aas-majors>).

Computer-Integrated Machining Diploma – D50210

Gainful Employment Disclosure (<https://www.stanly.edu/ajax/gedt/ED50210.html>)

Course	Title	Credit Hours
First Year		
Fall		
MAC 111	Machining Technology I	6
MAC 131	Blueprint Reading-Machining I	2

MAC 151	Machining Calculations	2
ACA 111	College Student Success	1
	Credit Hours	11
Spring		
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
Summer		
MAC 231	Cam: Computer Numerical Control Turning	3
MAC 232	CAM: Computer Numerical Control Milling	3
	Credit Hours	6
Second Year		
Fall		
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	44

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

Gainful Employment Disclosure (<https://www.stanly.edu/ajax/gedt/EC50210C.html>)

Course	Title	Credit Hours
First Year		
Fall		
MAC 131	Blueprint Reading-Machining I	2
MAC 151	Machining Calculations	2
MAC 122	CNC Turning	2
MAC 124	CNC Milling	2
	Credit Hours	8
Spring		
MAC 222	Advanced CNC Turning	2
MAC 224	Advanced CNC Milling	2
	Credit Hours	4
Summer		
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

Gainful Employment Disclosure (<https://www.stanly.edu/ajax/gedt/EC50210M.html>)

Course	Title	Credit Hours
First Year		
Fall		
MAC 131	Blueprint Reading-Machining I	2
MAC 151	Machining Calculations	2
MAC 111	Machining Technology I	6
	Credit Hours	10
Spring		
MAC 142	Machining Applications II	4
MAC 152	Advanced Machining Calculations	2
MAC 247	Production Tooling	2
	Credit Hours	8
	Total Credit Hours	18

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

Gainful Employment Disclosure (<https://www.stanly.edu/ajax/gedt/EC50210MC.html>)

Course	Title	Credit Hours
First Year		
Fall		
MAC 111	Machining Technology I	6
MAC 121	Introduction to CNC	2
	Credit Hours	8
Spring		
MAC 142	Machining Applications II	4
MAC 124	CNC Milling	2
	Credit Hours	6
Summer		
MAC 122	CNC Turning	2
WBL 110 or WBL 111	World of Work or Work-Based Learning I	1
	Credit Hours	3
	Total Credit Hours	17

Computer-Integrated Machining - CCP

Tuition-waived program for Career & College Promise (<https://www.stanly.edu/future-students/career-college-promise>) (high school juniors and seniors)

Code	Title	Credit Hours
MAC 111	Machining Technology I	6
MAC 121	Introduction to CNC	2

MAC 131	Blueprint Reading-Machining I	2
MAC 142	Machining Applications II	4
MAC 151	Machining Calculations	2
MAC 152	Advanced Machining Calculations	2
Total Credit Hours		18

View our video! (<https://www.stanly.edu/future-students/educational-offerings/computer-integrated-machining/view-our-videos>)