

Precision Machining

Career Studies Certificate

Program Coordinator: Johnnie Keene • MEC 104 • 276-739-2455

Length: Two Semesters

Purpose: This program is designed to provide individuals with manual machining concepts, blueprint reading and inspection procedures. Upon completion of this program, graduates will be prepared for employment as a manual lathe or mill operator.

Occupational Objectives: The Precision Machining Career Studies Certificate provides the basic skills necessary to secure an entry level job as a manual machinist. Students develop the basic skills necessary to read blueprints, function as a Lathe Operator, Drill Press Operator, and Milling Machine Operator.

Admission Requirements: General college curricular admission.

Program Notes: Students are strongly encouraged to meet with the program coordinator either before registering for their first semester or early in their first semester of study. Students will be required to furnish clear lens safety glasses, leather work footwear, and proper clothing for working in the lab.

Program Requirements: The curriculum will consist of both hands-on learning and classroom instruction. The program can be completed in one to two semesters and will prepare graduates for entry-level positions. Graduates will also obtain the OSHA-10 hour General Industry safety certification.

Track 1: (Day)

Course Number	Course Title	Lecture Hours	Lab Hours	Credits
First Semester (Fall)				
DRF 161	Blueprint Reading I	1	3	2
MAC 161	Machine Shop Practices I	2	3	3
MAC 121	Numerical Control I	1	2	2
SAF 130	Industrial Safety – OSHA 10	1	0	1
MAC 116	Machinist Handbook	2	0	2
MAC 122	Numerical Control II ¹	1	2	2
MAC 162	Machine Shop Practices II ²	2	3	3
SDV 101	Orientation to College Success	1	0	1
Total Credits for Career Studies Certificate		11	13	16

Footnotes:

¹Prerequisite: MAC 121

²Prerequisite or Corequisite: MAC 161

Track 2: (Evening)

Course Number	Course Title	Lecture Hours	Lab Hours	Credits
First Semester (Fall)				
MAC 161	Machine Shop Practices I	2	3	3
MAC 121	Numerical Control	1	2	2
SAF 130	Industrial Safety	1	0	1
SDV 101	Orientation to College Success	1	0	1
Total		5	5	7
Second Semester (Spring)				
DRF 161	Blueprint Reading I	1	3	2
MAC 162	Machine Shop Practices II	2	3	3
MAC 116	Machinist Handbook	2	0	2
MAC 122	Numerical Control II	1	2	2
Total		6	8	9
Total Credits for Career Studies Certificate		11	13	16

Advanced Precision Machining

Career Studies Certificate

Program Coordinator: Johnnie Keene • MEC 104 • 276-739-2455

Length: One Semester

Purpose: This Career Studies Certificate is designed to provide individuals with advanced machining concepts on lathes and machining centers. Students will learn conventional and conversational programming on each machine. Upon completion of this program, graduates will be prepared for employment as CNC lathe or mill operator.

Occupational Objectives: The Advanced Precision Machining Career Studies Certificate provides the basic skills necessary to secure an entry level job as a CNC machinist. Students develop the basic skills necessary to Set-up, program and operate CNC lathes and machining centers.

Track 1: (Day)

Course Number	Course Title	Lecture Hours	Lab Hours	Credits
First Semester (Fall)				
MAC 150	Introduction to Computer Aided Manufacturing	2	4	3
MAC 163	Machine Shop Practices III	2	3	3
MAC 164	Machine Shop Practices IV	2	3	3
MAC 123	Numerical Control III	2	3	3
MAC 126	Introductory CNC Programming	2	3	3
MAC 111	Machine Trade Theory and Computation I	3	0	3
Total		13	16	18

Track 2: (Evening)

Course Number	Course Title	Lecture Hours	Lab Hours	Credits
First Semester (Fall)				
MAC 163	Machine Shop Practices III	2	3	3
MAC 150	Introduction to Computer Aided Manufacturing	2	4	3
MAC 123	Numerical Control III	2	3	3
Total		6	10	9
Second Semester (Spring)				
MAC 164	Machine Shop Practices IV	2	3	3
MAC 126	Intro to Computer Numerical Control Programming	2	3	3
MAC 111	Machine Trade Theory & Computation I	3	0	3
Total		7	6	9
Total Credits for Career Studies Certificate		18		