



**South Central College**  
**Program Design**

## **CERT 3529/2458 Machine Tool Technology Foundations**

### **Program Information**

**Instructional Level** Technical Diploma

**Career Cluster** Engineering, Manufacturing & Technology

### **Description**

The certificate program consists of opportunities for students to work with multiple aspects of Machine Tool Technology including working with engineering drawings, CNC programming, lathe turning, vertical milling, grinding, and jig and fixtures. During this certificate program, learners will have the opportunity to receive national credentials from the National Institute for Metalworking Skills (NIMS).

### **Program Student Learning Outcomes**

- 1 Operate industry-specific computer software.
- 2 Demonstrate computer machining skills.
- 3 Demonstrate safe machining practices.
- 4 Produce quality machined parts.
- 5 Evaluate the quality of machined parts against industry standards.

### **Program Configurations**

#### **Full Time Schedule**

#### **Credits**

Technical Course 30

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**Total Credits 30**

#### **Semester 1**

<b>Course #</b>	<b>Course Title</b>	<b>Credits</b>	<b>Function</b>
MTT 1110	<b>CNC Milling Level I</b>	5	Technical Course
MTT 1120	<b>CNC Turning Level I</b>	5	Technical Course
MTT 1130	<b>Job Planning, Benchwork and Layout Level I</b>	3	Technical Course
MTT 1140	<b>Measurement, Materials and Safety Level I</b>	3	Technical Course
MTT 1150	<b>Machining Computations</b>	1	Technical Course

## Semester 2

Course #	Course Title	Credits	Function
MTT 1210	Concept Engineering I	4	Technical Course
MTT 1220	CNC Programming I	4	Technical Course
MTT 1230	Quality Assurance I	2	Technical Course
MTT 1240	Applications I	3	Technical Course

## Part Time Schedule

### Semester 1

Course #	Course Title	Credits	Function
MTT 1130	Job Planning, Benchwork and Layout Level I	3	
MTT 1140	Measurement, Materials and Safety Level I	3	
MTT 1150	Machining Computations	1	

### Semester 2

Course #	Course Title	Credits	Function
MTT 1110	CNC Milling Level I	5	
MTT 1120	CNC Turning Level I	5	

### Semester 3

Course #	Course Title	Credits	Function
MTT 1230	Quality Assurance I	2	
MTT 1210	Concept Engineering I	4	

### Semester 4

Course #	Course Title	Credits	Function
MTT 1240	Applications I	3	
MTT 1220	CNC Programming I	4	

## Program Course List

Number	Title	Credits	Pre/Corequisites
MTT 1110	CNC Milling Level I	5	Declare MTT as a major.
MTT 1120	CNC Turning Level I	5	Declare MTT as a major.
MTT 1130	Job Planning, Benchwork and Layout Level I	3	Declare MTT as a major.
MTT 1140	Measurement, Materials and Safety Level I	3	Declare MTT as a major.
MTT 1150	Machining Computations	1	Declare MTT as a major.

<b>MTT 1210</b>	<b>Concept Engineering I</b>	4	MTT 1130 and MTT 1140
<b>MTT 1220</b>	<b>CNC Programming I</b>	4	MTT 1110 and MTT 1120
<b>MTT 1230</b>	<b>Quality Assurance I</b>	2	MTT 1130 and MTT 1140
<b>MTT 1240</b>	<b>Applications I</b>	3	MTT 1110 and MTT 1120