



South Central College

## MTT 2120 CNC Programming

Course Outcome Summary

### Course Information

**Description** This course provides students with continuing opportunities to work with CNC programming, building on what was learned in the previous programming course. Additional material includes alternative work holding and advanced tooling set-up and operation for production of an advanced project. (Prerequisite: MTT 2120).

**Total Credit** 4

**Total Hours** 96

### Instructional Methods

Instructional Method	Credit Hours
Lecture	2/32
Lab	2/64

### Prerequisite

MTT 2120

### Intentional Core Competencies

**Communication** - Students will be able to demonstrate appropriate and effective interactions with others to achieve their personal, academic, and professional objectives.

**Critical and Creative Thinking** - Students will be able to demonstrate purposeful thinking with the goal of using a creative process for developing and building upon ideas and/or the goal of using a critical process for the analyzing and evaluating of ideas.

### Course Competencies

#### Identify coolant maintenance

**Learning Objectives**

- Describe how to check coolant viscosity
- Describe how to top up or top down coolant viscosity

#### Identify oil level maintenance

**Learning Objectives**

- Demonstrate checking oil level
- Demonstrate checking air pressure

Describe proper air pressure for CNC lathe collet or CNC lathe chuck

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Use feed hold

Describe emergency stop

### **e r e rogra o err e**

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Use spindle override

Use feedrate override

### **e r e ourth a**

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Describe fourth axis

Demonstrate fourth axis setup

### **e on trate n at ng art**

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Demonstrate indicating part for flatness

Demonstrate indicating a diameter

### **e on trate ro er tool hol er u e**

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Explain tool holder taper

Explain the different collet tapers

### **ent erent t e o utter**

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Use carbide endmills

Use roughing endmills

Use carbide inserted tooling

### **t l e rogra tart**

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Describe mid-program start

Discuss setting parameters for mid-program start

### **e elo C C o e th Ma ter a**

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Describe NC code format

Describe NC upload and editing of program

### **e on trate C C rogra ng o en on tool ath**

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Use 2d high speed toolpaths

Use circle toolpaths (C-Mill, Slot Mill, Helix Bore)

### **e on trate C C rogra ng o en on tool ath**

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Use surface rough and finish toolpaths

Use surface high speed toolpaths

## **SCC A e It State ent**

South Central College strives to make all learning experiences as accessible as possible. If you have a disability and need accommodations for access to this class, contact the Academic Support Center to request

and discuss accommodations. North Mankato: Room B-132, (507) 389-7222; Faribault: Room A-116, (507) 332-7222.

Additional information and forms can be found at: [www.southcentral.edu/disability](http://www.southcentral.edu/disability)

This material can be made available in alternative formats by contacting the Academic Support Center at 507-389-7222.