

# 2024-2025 TTC Catalog - Machine Tool Technology (MTT)

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## **MTT 001 - Machine Tool Technology Non-Equivalent**

**Lec:** 0 **Lab:** 0 **Credit:** 0

Indicates credit given for machine tool technology course work transferred from another college for which there is no equivalent course at TTC.

**Grade Type:** Letter Grade

**Division:** Manufacturing and Maintenance

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## **MTT 101 - Introduction to Machine Tool**

**Lec:** 1.5 **Lab:** 1.5 **Credit:** 2.0

This course covers the basics in measuring tools, layout tools and bench tools; and basic operations of lathes, mills and drill presses.

**Grade Type:** Letter Grade

**Division:** Manufacturing and Maintenance

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## **MTT 111 - Machine Tool Theory and Practice I**

**Lec:** 1.0 **Lab:** 12.0 **Credit:** 5.0

**Course Offered**

Fall

This course is an introduction to the basic operation of machine shop equipment.

**Prerequisite or Corequisite**

MTT 101

**Grade Type:** Letter Grade

**Division:** Manufacturing and Maintenance

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## **MTT 112 - Machine Tool Theory and Practice II**

**Lec:** 1.0 **Lab:** 12.0 **Credit:** 5.0

**Course Offered**

Spring

This course is a combination of the basic theory and operation of machine shop equipment.

**Prerequisite or Corequisite**

MTT 101

**Grade Type:** Letter Grade

**Division:** Manufacturing and Maintenance

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**MTT 114 - 3D Printing Theory and Operations**

**Lec:** 2.0 **Lab:** 6.0 **Credit:** 4.0

**Course Offered**

Fall

This course is the study of 3D printing processes, materials, and machine operations.

**Grade Type:** Letter Grade

**Division:** Manufacturing and Maintenance

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**MTT 120 - Machine Tool Print Reading**

**Lec:** 3.0 **Lab:** 0 **Credit:** 3.0

**Course Offered**

Fall

This course is designed to develop the basic skills and terminology required for visualization and interpretation of common prints used in the machine tool trades.

**Grade Type:** Letter Grade

**Division:** Manufacturing and Maintenance

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**MTT 143 - Precision Measurements**

**Lec:** 1.5 **Lab:** 1.5 **Credit:** 2.0

**Course Offered**

Fall

Spring

This course is a study of precision measuring instruments.

**Grade Type:** Letter Grade

**Division:** Manufacturing and Maintenance

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## **MTT 145 - Machining of Metals**

**Lec:** 3.0 **Lab:** 0 **Credit:** 3.0

### **Course Offered**

Spring

This course covers theoretical and practical training in the physical properties of metals, their required stock removal/speeds/feeds and depths of cut, and finish requirements.

**Grade Type:** Letter Grade

**Division:** Manufacturing and Maintenance

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## **MTT 175 - Innovations in Machining Technology**

**Lec:** 2.0 **Lab:** 3.0 **Credit:** 3.0

### **Course Offered**

Summer

This course covers changes in machining technologies, major advancements in the machine tool field, or specialty training items.

### **Prerequisite**

MTT 111

**Grade Type:** Letter Grade

**Division:** Manufacturing and Maintenance

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## **MTT 243 - Advanced Dimensional Metrology for Machinists**

**Lec:** 3.0 **Lab:** 0 **Credit:** 3.0

### **Course Offered**

Fall

This course is a study of higher levels of measurement, measuring instruments, and measuring techniques. The course consists of a theoretical and practical study incorporating the metric system, geometric dimensioning/tolerancing, sine bars/plates for compound angles and more.

Completion of a Machine Tool Technology Degree or Certificate program.

### **Corequisite**

MTT 255

**Grade Type:** Letter Grade

**Division:** Manufacturing and Maintenance

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## **MTT 250 - Principles of CNC**

**Lec:** 2.0 **Lab:** 3.0 **Credit:** 3.0

### **Course Offered**

Summer

This course is an introduction to the coding used in CNC programming.

**Grade Type:** Letter Grade

**Division:** Manufacturing and Maintenance

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## **MTT 251 - CNC Operations**

**Lec:** 2.5 **Lab:** 1.5 **Credit:** 3.0

### **Course Offered**

Spring

Summer

This course is a study of CNC machine controls, setting tools, and machine limits and capabilities.

### **Corequisite**

MTT 250

and

MTT 253

or

departmental approval

**Grade Type:** Letter Grade

**Division:** Manufacturing and Maintenance

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## **MTT 253 - CNC Programming and Operations**

**Lec:** 2.0 **Lab:** 3.0 **Credit:** 3.0

### **Course Offered**

Summer

This course is a study of the planning, programming, selecting, tooling, determining speeds and feeds, setting, operating and testing of CNC programs on CNC machines.

**Corequisite**

MTT 250

or

advisor approval

**Grade Type:** Letter Grade

**Division:** Manufacturing and Maintenance

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**MTT 255 - CNC Programming II**

**Lec:** 1.0 **Lab:** 6.0 **Credit:** 3.0

**Course Offered**

Fall

This course includes CNC programming with simulated production conditions.

Completion of Machine Tool Technology Degree or Certificate program.

**Corequisite**

MTT 243

**Grade Type:** Letter Grade

**Division:** Manufacturing and Maintenance

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**MTT 258 - CNC Machine Tool Cam**

**Lec:** 3.0 **Lab:** 0 **Credit:** 3.0

**Course Offered**

Fall

This course is a study of computer assisted manufacturing graphics systems needed to create CNC programs.

**Prerequisite**

MTT 243

and

MTT 255

**Corequisite**

MTT 260

**Grade Type:** Letter Grade

**Division:** Manufacturing and Maintenance

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## **MTT 260 - Advanced Multi-Axis Programming and Ops I**

**Lec:** 3.0 **Lab:** 3.0 **Credit:** 4.0

### **Course Offered**

Fall

This course is a study of programming advanced CNC multi-axis machines, setting of tools, machine limits, capabilities, and safety.

### **Prerequisite**

MTT 243

and

MTT 255

### **Corequisite**

MTT 258

**Grade Type:** Letter Grade

**Division:** Manufacturing and Maintenance

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