



**COWLEY COLLEGE  
& Area Vocational Technical School**

**COURSE PROCEDURE FOR**

**MASTERCAM LATHE  
MTT3555 3 Credit Hours**

**Student Level:**

This course is open to students on the college level in either the freshman or sophomore year and to area high school vocational students.

**Catalog Description:**

**MTT 3555 - MASTERCAM LATHE (3hrs)**

This is an introductory course designed to give the student understanding lathe geometry and machining. It will build on information from the beginning classes.

**Prerequisites:**

MTT3547 Advanced Computer Aided Manufacturing or instructor approval.

**Controlling Purpose:**

To give the student the ability to program CNC lathes with Mastercam software.

**Learner Outcomes:**

Upon completion of the course, the student will be able to demonstrate the use of the programming software to create the numerical control codes necessary to run both 2 axis and multi-axis lathes.

The learning outcomes and competencies detailed in this course outline or syllabus meet or exceed the learning outcomes and competencies specified by the Kansas Core Outcomes Groups project for this course as approved by the Kansas Board of Regents.

**Units Outcomes and Criterion Based Evaluation Key for Core Content:**

The following defines the minimum core content not including the final examination period. Instructors may add other content as time allows.

**Evaluation Key:**

- A = All major and minor goals have been achieved and the achievement level is considerably above the minimum required for doing more advanced work in the same field.
- B = All major goals have been achieved, but the student has failed to achieve some of the

Rev: 6/01/2016

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less important goals. However, the student has progressed to the point where the goals of work at the next level can be easily achieved.

- C = All major goals have been achieved, but many of the minor goals have not been achieved. In this grade range, the minimum level of proficiency represents a person who has achieved the major goals to the minimum amount of preparation necessary for taking more advanced work in the same field, but without any major handicap of inadequacy in his background.
- D = A few of the major goals have been achieved, but the student's achievement is so limited that he is not well prepared to work at a more advanced level in the same field.
- F = Failing, will be computed in GPA and hours attempted.
- N = No instruction or training in this area.

### UNIT 1: Stock Setup And Spindle Definition

Outcomes: Upon completion of this course, the student will be able to demonstrate the ability to set up stock and explain how it affects the part, explain the difference between a Lathe and a Mill, and be able to verify parts.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Explain how to setup the stock for the lathe function.
						Demonstrate how the stock setup affects the tool paths.
						Explain lathe/mill turn.
						Back plot and verify a part.

**UNIT 2: Parts**

Outcomes: Upon completion of this course, the student will be able to demonstrate how to set DZ plane, facing and roughing parts as well as run a finish pass.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Set the tool plane to DZ.
						Face a part.
						Rough a part.
						Run the finish pass.
						Drill a part.

**UNIT 3: Parts And Threads**

Outcomes: Upon completion of this course, the student will be able to demonstrate the ability to groove a part, internal bore, turn threads, and cutoff, as well as verify parts and estimate the run time.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Groove a part.
						Internal bore of a part.
						Turn threads.
						Cut off parts.
						Verify and provide estimated run time.

## UNIT 4: Mill Operations

Outcomes: Upon completion of this course, the student will be able to demonstrate the ability to create geometry and toolpaths for Mill/Turn Lathes.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Create geometry necessary to make mill operations on mill/turn lathes.
						Create mill toolpaths in the multi-axis lathe function.

### **Projects Required:**

As assigned by instructor.

### **Textbook:**

Contact Bookstore for current textbook.

### **Materials/Equipment Required:**

None

### **Attendance Policy:**

Students should adhere to the attendance policy outlined by the instructor in the course syllabus.

### **Grading Policy:**

The grading policy will be outlined by the instructor in the course syllabus.

### **Maximum class size:**

Based on classroom occupancy

### **Course Timeframe:**

The U.S. Department of Education, Higher Learning Commission and the Kansas Board of Regents define credit hour and have specific regulations that the college must follow when developing, teaching and assessing the educational aspects of the college. A credit hour is an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally-established equivalency that reasonably approximates not less than one hour of classroom or direct faculty instruction and a minimum of two hours of out-of-class student work for approximately fifteen weeks for one semester hour of credit or an equivalent amount of work over a different amount of time. The number of semester hours of credit allowed for each distance education or blended hybrid courses shall be assigned by the college based on the amount of time needed to achieve the same course outcomes in a purely face-to-face format.

**Refer to the following policies:**

[402.00 Academic Code of Conduct](#)

[263.00 Student Appeal of Course Grades](#)

[403.00 Student Code of Conduct](#)

**Disability Services Program:**

Cowley College, in recognition of state and federal laws, will accommodate a student with a documented disability. If a student has a disability, which may impact work in this class which requires accommodations, contact the Disability Services Coordinator.