



**COWLEY COLLEGE
& Area Vocational Technical School**

COURSE PROCEDURE FOR

**MASTERCAM TOOLPATHS
MTT3551 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 3551 - MASTERCAM TOOLPATHS (3 hrs)

This is an advanced course designed to build on the knowledge of 2D and 3D geometry and learn to manipulate these drawings to achieve a desired toolpath/nc program.

Prerequisites:

MTT3547 Advanced Computer Aided Manufacturing or instructor approval.

Controlling Purpose:

This course is designed to help the student increase his/her knowledge concerning the use of Mastercam to program and machine wireframe geometry.

Learner Outcomes:

Upon completion of the course, the student will be able to create programs from wireframes, describe the use of the toolpaths and achieve a toolpath/nc program.

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.

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DISCLAIMER: THIS INFORMATION IS SUBJECT TO CHANGE. FOR THE OFFICIAL COURSE PROCEDURE CONTACT ACADEMIC AFFAIRS.

- B = All major goals have been achieved, but the student has failed to achieve some of the 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: Toolpaths						
Outcomes: Upon completion of this course, the student will be able to identify proper toolpaths and demonstrate the chain manager.						
A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Define associativity.
						Determine toolpath sections.
						Demonstrate the chain manager.

UNIT 2: Operations Manager

Outcomes: Upon completion of this course, the student will be able to demonstrate the purpose and functions of the operations manager.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Describe the operations manager.
						Explain the pick and place method.
						Demonstrate how to arrange toolpaths using the operations manager.
						Explain how to regenerate toolpaths.

UNIT 3: Material Settings

Outcomes: Upon completion of this course, the student will be able to demonstrate how to set up stock, calculate feeds and speeds, and explain multi-pass toolpaths.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Explain the use of the stock setup.
						Demonstrate the use of the feeds and speeds calculations.
						Explain the difference in multi-pass and multi-depth.

UNIT 4: Extruding And Revolving Solids

Outcomes: Upon completion of this course, the student will be able to demonstrate how to transform, mirror, and rotate an object.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Explain the use of the transform function.
						Demonstrate the mirror function within transform.
						Demonstrate the rotate function within transform.

Projects Required:

None

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.