



**COWLEY COLLEGE  
& Area Vocational Technical School**

**COURSE PROCEDURE FOR**

**SOLIDS  
MTT3552 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 3552 - SOLIDS (3 hrs)**

This is an advanced design class used to take the students from the wireframe construction to a solid model. The student will learn to take wireframe drawings and turn them into a solid model, and to create toolpaths from solid models. or instructor approval.

**Prerequisites:**

MTT3547 Advanced Computer Aided Manufacturing (CAM) or instructor approval.

**Controlling Purpose:**

This course is designed to help the student increase his/her knowledge concerning the use of Mastercam to create and import solid models.

**Learner Outcomes:**

Upon completion of the course, the student will be able to create solids using Mastercam and to import solids from other CAD programs.

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

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

- 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 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.

<b>UNIT 1: Solids</b>						
Outcomes: Upon completion of this course, the student will be able to demonstrate the abilities to recognize wireframes, solids, and primitive solids and how to create them.						
A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Recognize wireframe, surfaces, solids, and primitive solids.
						Define the steps in feature-based modeling.
						Sketch solid modeling functions.

## UNIT 2: Understanding History Trees

Outcomes: Upon completion of this course, the student will be able to demonstrate the ability to manage the solid drawing through the solids manager, and how to utilize the history tree.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Use Boolean operation functions.
						Describe parent and child relationships in the cad drawing.
						Manipulate a solid through the history tree.

## UNIT 3: Primitive Solids

Outcomes: Upon completion of this course, the student will be able to demonstrate the ability to define, name, and create primitive solids, and explain what a sketched solid is.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Define primitive solids.
						Create primitive solids.
						Explain what a sketched solid is.
						List the 5 types of primitive solids.

## UNIT 4: Extruding And Revolving Solids

Outcomes: Upon completion of this course, the student will be able to demonstrate the ability to create a solid model from geometry and explain the details of solid features and parameters.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Perform the process of solid modeling.
						Know the details of extruding solid features, looping and sections.
						Explain the extruding parameters.

### **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.