



**COWLEY COLLEGE
& Area Vocational Technical School**

COURSE PROCEDURE FOR

**3D WIREFRAME DRAWING AND SURFACES
MTT3553 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 3553 - 3D WIREFRAME DRAWING AND SURFACES (3 hrs)

This is an advanced course designed to give the student an understanding on surface creation. It will build on information from the beginning classes.

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 draw and create both 3D wireframe and surfaces.

Learner Outcomes:

Upon completion of the course, the student will be able to create geometry in 3D along with the surfaces for this wireframe.

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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- 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: 3D Wireframe Construction
 Outcomes: Upon completion of this course, the student will be able to demonstrate the ability to explain wireframe and surface features, along with listing construction planes and Z depth control.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Explain the features wireframe models and surface model.
						List the construction planes.
						Describe Z depth control.

UNIT 2: Construction Planes

Outcomes: Upon completion of this course, the student will be able to demonstrate the ability to set, utilize, and explain all aspects of the construction planes.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Describe each of the construction planes.
						Demonstrate the use of each of the construction planes.
						Describe and demonstrate how to set Z in each of the construction planes.
						Describe how to use two lines to set a construction plane.
						Explain the purpose of the 3D construction plane.

UNIT 3: Surfaces

Outcomes: Upon completion of this course, the student will be able to demonstrate the ability to explain what a surface is, understand the mathematics of surfaces, how to trim fillet, and blend surfaces.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Explain what a surface is.
						Demonstrate an understanding of surface mathematics.
						Demonstrate offsetting, trimming, filleting, and blending surfaces.

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.

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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.