



**COWLEY COLLEGE
& Area Vocational Technical School**

COURSE PROCEDURE FOR

**MACHINING III
MTT3566 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 3566 - MACHINING III (3 hrs)

Students will become familiar with the operation of milling machines, grinders, types of metals, and the heat-treatment of metals. Skill is developed in the use of attachments involved with all the basic machine tools.

Prerequisites:

MTT3562 Machining II or instructor approval.

Controlling Purpose:

This course is designed to help the student increase their knowledge concerning the Milling Machine, the Surface Grinder and start the student on an understanding of CNC mill controllers.

Learner Outcomes:

After completing the unit the student will be able to demonstrate safe use of and set-up procedures for the milling machine, the surface grinder, and a CNC mill.

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 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: Safety						
Outcomes: Upon completion of this unit, the student will be able to successfully demonstrate and discuss the safety required in the machine shop.						
A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Comply with shop and equipment safety rules.
						Inspect work area and equipment for safe working environment.
						Correct safety hazards.
						Comply with safety requirements for working around.
						Participate in safety training program.

UNIT 2: Milling Machines

Outcomes: Upon completion of this unit, the student will be able to successfully manufacture parts by using the Bridgeport Mill machine set-ups, drill holes, perform precision layouts, and set-ups for conventional milling and do first part inspection.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Identify all the major parts of the vertical milling machine.
						Inspect parts with precision measuring tools.
						Measure parts using dial calipers.
						Measure parts using vernier measuring tools.
						Measure parts using outside micrometers.
						Measure parts using depth micrometers.
						Measure parts with height gage.
						Verify dimension.
						Verify alignments.
						Verify clearances.
						Inspect machined parts.
						Analyze specifications.
						Identify all the major parts of the vertical milling machine.
						Inspect parts with precision measuring tools.
						Measure parts using dial calipers.
						Measure parts using vernier measuring tools.
						Measure parts using outside micrometers.
						Measure parts using depth micrometers.

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

						Measure parts with height gage.
						Verify dimension.
						Verify alignments.
						Verify clearances.

UNIT 3: Surface Grinders

Outcomes: Upon completion of this unit, the student will be able to successfully use the surface grinder for finish grinding both, flat and angular surfaces.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Inspect, mount, and dress surface grinding wheels.
						Maintain grinding coolant system of cut.
						Grind parallel surfaces on surface grinder.
						Grind parts square on surface grinder.
						Inspect ground parts.
						Perform basic surface grinder maintenance.
						Plan sequence of surface grinder operations.
						Set up surface grinder for manual operations.
						Set up surface grinder for automatic operations.
						Remove warp using surface grinder.

Projects Required:

As assigned

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.