MACH 111 - Machine Technology 2 Course Outline

Approval Date: 05/08/2007
Effective Date: 01/16/2018

SECTION A

Unique ID Number CCC000310127
Discipline(s) Machine Tool Technology
Division Career Education and Workforce Development
Subject Area

SECTION B

General Education Information:

SECTION C

Course Description

Repeatability May be repeated 0 times

Catalog Description An intermediate course in the Machine Tool Technology degree program. Emphasis is placed on accuracy and efficiency of producing machined parts on conventional machine tools. Advanced lathe operations, including various thread forms, are a focus of the course.

Schedule Description An intermediate course in the Machine Tool Technology degree program. Emphasis is placed on accuracy and efficiency of producing machined parts on conventional machine tools.

SECTION D

Condition on Enrollment

1a. Prerequisite(s)

MACH 110

1b. Corequisite(s): *None*

1c. Recommended: *None*

1d. Limitation on Enrollment: *None*

SECTION E

Course Outline Information

1. Student Learning Outcomes:

A. Work safely and accurately in a manufacturing environment.
B. Perform calculations related to accurately machining screw threads.
C.

b. Pins
c. Retaining rings
d. Keys

D. Materials
   a. Identification of materials
   b. Metallurgy
   c. Steel selection
   d. Non-ferrous metal characteristics and selection

E. Physics of metal cutting
   a. Cutting tool geometry
   b. High-speed steel tooling
   c. Tungsten carbide tooling

F. Thread forms and thread cutting
   a. Unified thread characteristics
   b. Metric thread characteristics
   c. Acme thread characteristics and tooling
   d. Modified square thread characteristics and tooling

G. Cutting and measurement of tapers
   a. Using compound rest
   b. Using taper attachment
   c. Converting taper-per-foot to angles in degrees
   d. Techniques for measuring tapers

H. Machining precision thread gauges
   a. Using taps and dies
   b. Single-point cutting tool method
   c.

4. Methods of Instruction:

Lab:
Lecture:
Projects:

5. Methods of Evaluation: Describe the general types of evaluations for this course and provide at least two, specific examples.

Typical classroom assessment techniques

Quizzes --
Final Exam --
Mid Term --

Additional assessment information:

Students will be given written weekly quizzes covering assigned reading and weekly lectures. (example: quizzes consisting of identification and multiple choice questions).
Students will be given a written midterm exam and a written final exam. (example: a midterm and a final exam consisting of multiple choice and identification questions).
Students will complete weekly lab assignments. (example: lab assignment #1, machining of a 1"-8 UNC thread).

Letter Grade or P/NP

6. Assignments: State the general types of assignments for this course under the following categories and provide at least two specific examples for each section.

A. Reading Assignments
   1. Students will be required to read their notes from lab lectures in order to perform their lab assignments (example: lecture on the sections on threads, ?Machine Tool

Practices?, Kibbe, et al. textbook).
2. Students will be required to read weekly assignments from the textbooks in preparation for lectures and for lab assignments (example: section on Mechanical Hardware, ?Machine Tool Practices?, Kibbe, et al. textbook).

B. Writing Assignments
1. Students will be required to read the assigned portions of the textbook to determine the correct procedure for machining a part (example: sections on screw threads, ?Machine Tool Practices?, Kibbe, et al. textbook).
2. Students will be required to take notes on the procedures for completion of lab assignments (example: lecture on the sections on tapers, ?Machine Tool Practices?, Kibbe, et al. textbook).
3. Students will analyze the drawings given to them and formulate a strategy for machining the assigned part (example: drawing for machining a tapered pipe thread).

C. Other Assignments
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7. Required Materials

A. EXAMPLES of typical college-level textbooks (for degree-applicable courses) or other print materials.

Book #1:

Author:	Kibbe, Neely, Meyer, & White
Title:	Machine Tool Practice
Publisher:	