MACH 100 - Machine Shop Practice Course Outline

Approval Date: 12/12/2020
Effective Date: 08/14/2020

SECTION A

Unique ID Number	CCC000315741
Discipline(s)	Machine Tool Technology
Division	Career Education and Workforce Development
Subject Area	Machine Tool Technology
Subject Code	MACH
Course Number	100
Course Title	Machine Shop Practice
TOP Code/SAM Code	0956.30 - Machine Tool Technology/Machinist* / D - Possible Occupational
Rationale for adding this course to the curriculum	Deleting SLO to align course with high school articulation. Plus, SLO not needed for this course. Updating textbook edition.
Units	3
Cross List	*N/A*
Typical Course Weeks	18

Total Instructional Hours

	Contact Hours
Lecture	36.00
Lab	54.00
Activity	0.00
Work Experience	0.00
Outside of Class Hours	72.00

Total Contact Hours	90
Total Student Hours	162
Open Entry/Open Exit	No
Maximum Enrollment	
Grading Option	Letter Grade or P/NP
Distance Education Mode of Instruction	

SECTION B

General Education Information:

SECTION C

Course Description

Repeatability May be repeated 0 times

Catalog Description This is a basic course in machine tool technology that satisfies the degree requirement for welding and DDGT. This course develops skills in the use of precision measuring instruments and provides students with an overview of the operations of the lathe, drill press, vertical milling machine, horizontal milling machine and surface grinder.

Schedule Description

SECTION D

Condition on Enrollment

1a. Prerequisite(s): *None*

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 machining operations.
C. Measure machined parts accurately with precision measurement instruments.
D. Complete basic machining operations on the engine lathe, milling machine, drill press and grinder.
E. Use hand tools properly to complete machined parts.

2. Course Objectives: Upon completion of this course, the student will be able to:

A. Accurately use scale and precision measurement instruments.
B. Interpret a drawing or sketch and devise a manufacturing process.
C. Select from different tools and tooling for manufacturing a part.
D. Use safe work practices with various machine tools.
E.

3. Course Content

A. Safety in a manufacturing environment
B. Dimensional measurement
C. Semi–precision instruments
D. Layout tools and procedures
E. Hand Tools
F. Turning machines
G. Milling machines
H. Surface grinders
I. Drilling machines
J. Heat-treating steel
K.

4. Methods of Instruction:

Lab: Instructor will lecture in the lab on shop safety and demonstrate safe operation of machine tools. Instructor will demonstrate applicable machining techniques for the safe and accurate completion of projects.
Lecture: Instructor will lecture from course textbooks, from videos and other media, and will lecture from personal experience.Instructor will lecture on order of operations for manufacture of projects.
Projects: Students will work independently in the lab on completion of projects under instructor supervision and guidance.

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 -- Students will take weekly quizzes covering lectures and assigned reading Quizzes will consist of identification and multiple choice questions.
Projects -- Students will be required to complete four individual lab assignments (example: lab assignment #1, machining of a chucking center).
Final Exam -- Students will be required to complete a written final examination consisting of multiple choice and identification questions.
Mid Term -- Students will be required to complete a written midterm examination consisting of multiple choice and identification questions.

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 assigned work from the textbook prior to lectures and weekly quizzes. Example: section on lathe operations and controls, "Machine Tool Practices", Kibbe, et al., textbook.
   2. Students will be required to read the textbook and furnished lab drawings to complete assigned lab projects. Example: lab assignment #1, machining of a chucking center.
B. Writing Assignments
   1. Students will be required to read assigned work from the textbook to prepare for lectures, weekly quizzes, and to solve problems in preparation for lab assignments. Example: section on lathe operations and controls, "Machine Tool Practices", Kibbe, et al., textbook.
   2. The students will complete a written midterm and final examination. Example: a midterm and a final exam consisting of multiple choice and identification questions.
   3. The students will complete weekly written quizzes covering lectures and reading assignments. Example: quizzes consisting of identification and multiple choice questions.
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: Prentice-Hall
Date of Publication: 2019

Edition: 11th

B. Other required materials/supplies.