COURSE INFORMATION FORM

DISCIPLINE
CIMM

COURSE TITLE
Manual Lathe Operation

CR.HR  3  LECT HR.  1.5  LAB HR.  3  CLIN/INTERN HR.  ______  CLOCK HR.  ______

CATALOG DESCRIPTION
The student will learn to select appropriate tooling, setup and safely operate a manual lathe. This course is designed for students in machining and manufacturing careers.

PREREQUISITES
CIMM 100 with a C or better or concurrent enrollment

EXPECTED STUDENT OUTCOMES IN THE COURSE (ESO)
Upon completion of this course, the student will be able to:

1. Set up and safely operate a manual lathe.
2. Demonstrate basic lathe care and maintenance.
3. Calculate feeds and speeds for lathe operations.
4. Select appropriate method and tools needed to indicate, center and align tooling used in lathe operations.
5. Select appropriate cutting tools, setup, turn and face a part to drawing specifications.
6. Drill, ream, countersink holes to drawing specification on a lathe.
7. File and polish on a lathe.
8. Turning between centers on a lathe.
9. Set-up a compound rest to cut external and internal types.
10. Demonstrate the ability to use a digital readout to turn parts to specification.
GENERAL EDUCATION OUTCOMES (ESO)
Specify which general education outcomes, if any, are substantially addressed by the course. Numbers in parentheses identify the Expected Student Outcomes linked to the specific General Education Outcome.

Outcomes ESO

PROGRAM-LEVEL OUTCOMES

CAREER AND TECHNICAL EDUCATION PROGRAM OUTCOMES
Specify which Career and Technical program outcomes, if any, are substantially addressed by the course by completing the “Career and Technical Education template” to show the relationship between course and program outcomes to assessment measures.

1. Students will demonstrate the ability to apply foundational skills in an industrial setting, safely and to industry guidelines.
2. Students will think critically and apply problem-solving skills.

CLASS-LEVEL ASSESSMENT MEASURES
Student accomplishment of expected student outcomes may be assessed using the following measures. (Identify which measures are used to assess which outcomes.)

1. Classroom discussion/Participation: (1 – 10)
2. Assignments/Labs: (1 – 10)
3. Written and Application Exam: (1 – 10)
Individual instructors may order this outline as fits the needs of their individual courses. In addition, they may place more emphasis on some areas than on others. What is assured is that this particular list is covered in the course. Other topics may be added to a course as the instructor sees fit, and as time and interest allow. An *asterisk can be used to mark an item as optional.

I. Introduction to Lathe
   A. Safety
   B. Mill nomenclature

II. Tools and toolholding
   A. Introduction
   B. Tool types
   C. Proper selection
   D. Tool and workholding

III. Lathe Setup

IV. Lathe Operations
   A. Tool Geometry
   B. Facing and turning
   C. Shouldering
   D. Filing and polishing
   E. Center and spot drilling
   F. Holemaking
   G. Thread cutting with tap and dies
   H. Form cutting
   I. Grooving and cutoff
   J. Knurling

V. Manual Lathe Threading*

VI. Taper turning*