MAN 100  Shop Equipment and Tools

CREDIT HOURS: 3.00

CONTACT HOURS: 45.00

COURSE DESCRIPTION:
An introduction to precision measuring tools used in tooling and manufacturing processes. In the shop, emphasis is placed on exercises and projects that embody the process and operation of using hand tools, layout tools, and machine tools, such as hack saw, belt and disc sanders, drill press, engine lathe, vertical mill machines and surface grinders. Classroom emphasis is placed on related information that is essential to the set up and operation of machine tools, and to perform basic processes and operations in the shop.

PREREQUISITES: NONE

EXPECTED COMPETENCIES
Upon successful completion of this course, the student will:
1. Identify safe machining practices on mills and drill presses
2. Demonstrate the use, care, and application of basic precision measurement tools
3. Understand both metric and inch measurements
4. Identify several types of Steel Rules
5. Recognize surface plates and squares
6. Know the parts of a Machinist Square
7. Identify the most common types of outside micrometers
8. Explain the use of vernier calipers both inch and metric
9. Understand the use and application of inside, depth, and height measuring tools
10. Explain the use, care, buildup, and application of gage blocks
11. State the application and tools used for layout lines
12. Understand how to dimension layouts
13. List the main components of the vertical mill
14. Explain vertical mill operations and setup
15. List the main components of a drill press
16. Demonstrate drill press operations
17. Know the sequence of operations to make a part
18. Develop a language used in manufacturing

ASSESSMENT METHODS:
Student performance may be assessed by examination, quizzes, case studies, oral conversation, group discussion, oral presentations. The instructor reserves the option to employ one or more of these assessment methods during the course.

GRADING SCALE:
90%-100% = A
80%-89.9% = B
70%-79.9% = C
60%-69.9% = D
<60% = E