



Course Title: Benchwork

Course Number: MFG 153

Credits: 1 **Lab 1.0**

CATALOG DESCRIPTION: Benchwork is a basic course in the fundamentals principles, practices and tools used in semi-precision and precision layout including the various tools, methods and procedures for common machine shop Benchwork. Topics will include: Measurement systems Layout principles Use of Hand and power tools

COURSE OBJECTIVES: At the end of this class the student will have learned the benchwork processes in Advanced Manufacturing. Included in this are the concepts surrounding efforts using hand tools and semi-precision and precision layout. In addition, introduction to various measuring tools, their precision and proper use along with when to use which measuring device. The student that completes this course will be able to understand and use the following:

- Units of measure
- Identify various types of fasteners
- Understand fits and tolerances
- Understand the difference between semi-precision and precision layout
- Understand the proper use of layout tools
- Identify and understand the use of hand tools
- Use tools to layout semi-precision and precision layout work

COURSE CONTENT

1. Shop Safety
2. Basics of Applied Benchwork
3. Units of Measure
4. Precision and Semi-precision Measurement
5. Layout Procedures and Special Benchwork tools