SYLLABUS
REVISED 2012

DIVISION: Business & Engineering Technologies

CURRICULA IN WHICH COURSE IS TAUGHT: Precision Machining Technology

COURSE NUMBER AND TITLE: MAC 102 - Machine Shop II

CREDIT HOURS: 7 **HOURS/WK. LEC**: 4 **HOURS/WK. LAB:** 9 **LEC/LAB COMB:** 13

I. CATALOG DESCRIPTION:

MAC 102 provides for advanced operation and set up of lathes, milling machine, and grinders.

II. RELATIONSHIP OF THE COURSE TO CURRICULA OBJECTIVES IN WHICH IT IS TAUGHT:

This course advances the students ability to select and safely use basic machine tools and measuring instruments for the shaping and forming of machine parts.

III. REQUIRED BACKGROUND:

MAC 101 or equivalent

IV. COURSE CONTENT:

The following items will be covered in spring semester (not necessarily in this order):

1. Screw threads
   a. Types
   b. Nomenclature
   c. Calculation
   d. Cutting with engine lathe (chasing)
   e. Taps and dies
2. Cutting fluids
   a. Types
   b. Uses
   c. Method of application
3. Milling machine
   a. Types
   b. Nomenclature
   c. Cutter selection
   d. Feeds and speeds
   e. Work holding devices
4. Hand tools
   a. Files
   b. Hand reamers
   c. Combination squares
   d. Hack saws

5. Measurement
   a. Advanced use of micrometers (inside & outside)
   b. Advanced angular measurement
6. Metric Measurments
   a Metric micrometers
   b. Metric calipers
   c, Metric rulers
   d. Metric height gages

V. The following General Education Objectives will be addressed in this course:

___X____Communications **___X____Information Literacy**

___X____Culture and Social Understanding

___X____Critical Thinking **___X____Scientific reasoning**

___X____Quantitative Reasoning_____X____Personal Development

VI. LEARNER OUTCOMES ***VII. EVALUATION***

Learner outcome • Use precision measuring tools	**Evaluation method** • Lab exercises and written test
Learner outcome • **Perform threading and boring operations**	**Evaluation method** • Lab exercises and written test
Learner outcome • **Drill, ream and bore holes using milling machine**	**Evaluation method** • Lab exercises and written test
Learner outcome • Read metric prints and make metric projects using metric instruments	**Evaluation method** • Lab exercises, in class assignments and written test
Learner outcome • Fit parts using shrink, force and running methods	**Evaluation method** • Lab exercises and written tests
Learner outcome • Set-up and Use steady rest	**Evaluation method** • Lab exercises
Learner outcome • Select and mount work holding device and milling cutter for Horizontal	**Evaluation method** • Lab exercises and written tests

milling machine	

VII. Over 90% of the students complete this class.