

# MENG 201- MECHANICAL WORKSHOP PRACTICE

Eastern Mediterranean University  
Faculty of Engineering

**Department:**  
Mechanical Engineering

**Program Name:**  
Mechanical Engineering

**Program Code:** 23

**Year/Semester:**  
2018-2019 FALL

**Course Code:**  
MENG201

**Course Title:**  
Mechanical Workshop Practice

**Credit hours**

Lec.	Tut	Lab/Activity	Total
1		3	2

## Criterion 5:

### Subject Area:

- (a) College-level mathematics and basic sciences with experimental experience appropriate to the program.
- (b) Engineering topics appropriate to the program, consisting of engineering and computer sciences and engineering design, and utilizing modern engineering tools.
- (c) a broad education component that complements the technical content of the curriculum and is content with the program educational objectives.
- (d) a culminating major engineering design experience that
- 1) Incorporates appropriate engineering standards and multiple constraints
  - 2) Based on the knowledge and skills acquired in earlier course work.

### Hourly Contribution

- Basic Science ()
- College-level Mathematics ()
- Complex Engineering Problems ()
- Engineering Design ()
- Engineering Science (4)
- Team ()

### Types of Course

- Engineering or Area Core
- Engineering course offered by other programs
- Engineering or Area Elective
- Mathematics and Basic Sciences
- General Education

**Prerequisite(s):** CIVL 211

### Catalog Description:

This is to be conducted in the Mechanical Engineering Department's workshops by all Mechanical Engineering students who have completed a minimum of two semesters in the program.

The course covers the machine shop safety principles and hands on practicing. Hand on practicing will start by the layout a work and using the hand tools to machine it, and will continue by the applications on machining, using the shaping, turning, milling, grinding and welding practice. Each student is required to complete a project, which is to involve measurement, setting up, cutting, welding and finishing applications.

### Course Web Page:

**Textbook(s):** S. F. Krar and A. F. Check, Technology of Machine Tools, McGraw-Hill, 1998.

### Topics Covered and Class Schedule:

(1 hour of lecture and 3 hours practice work per week)

Week 1 Introduction to Workshop Practice . Workshop rules. Safety precautions and practices relating to eye protection, metal cutting, chip removal, and tool handling.

Weeks 2-3 Introduction to the measuring instruments, practicing on the reading of metric and inch ruler and vernier caliper, reading a metric micrometer and the use of the other measuring instruments, such as comparators, dial gages, block gages, optical flat, autocollimator, angle dekor and, surface texture .

<p>Week 4 Introduction to the hand tools and practicing on a metal machining on a metal workpiece using the hand tools, experience on the layout using the layout instruments.</p> <p>Week 5 Introduction to the shaping machine and practicing on the use of the shaping machine.</p> <p>Week 6 Introduction to the drilling machine and practicing on a drilling hole on the metal workpiece.</p> <p>Week 7 Thread cutting by hand taps, hacksaw practicing and curve filing.</p> <p>Week 8 Introducing the milling machines and milling operations. The three categories of milling cutters. Holding work on a machine table; T-slot bolts, V-blocks, angle plates, and planar jacks; using a vise to hold a work piece. Safety precautions for setup tools.</p> <p><b>Week 9 Mid-Term Examination Week</b></p> <p>Weeks 10-11 Grinding and finishing operations for part one.</p> <p>Weeks 12-13 Introducing the turning operations and setup tools; holding and driving a work held between centers on a lathe; holding a lathe work in a chuck; mounting and removing of a chuck. Safety precautions involving the turning operations on a lathe and with the setup tools.</p> <p>Weeks 14 Arc welding practices. Safety precautions related to arc welding. Completion and presentation of the project works.</p> <p><b>Week 15: Final Examination Week Starts</b></p>

Lecture and Tutorial Learning Outcome	Student Outcomes	Performed Assessments and Percentage
<p>At the end of the course, student must be able to</p> <ul style="list-style-type: none"> <li>• Understand the basics of workshop safety for machining, relating to eye protection, metal cutting and chip removal.</li> <li>• Understand the reading and interpretation of working drawings, and measurement techniques.</li> <li>• Understand the concepts of precision, tolerance and fits, and assembly of parts.</li> <li>• Understand the workshop practices involving shaping machine operations.</li> <li>• Understand the workshop practices involving drilling operations.</li> <li>• Understand the workshop practices involving milling machine operations.</li> <li>• Understand the workshop practices involving grinding machine operations.</li> <li>• Understand the workshop practices involving turning operations.</li> <li>• Understand the workshop practices involving welding operations.</li> </ul>	<b>g</b>	<p>Midterm 100%</p> <p>Final %100</p> <p>Practicing %100</p> <p>Attendance %100</p> <p>Engineering Drawing %100</p>

**Important Notes:**

University rules and regulations are applied to this course.