

Manufacturing Processes – Laboratory 0542.3791

Lecturer: Daniel Yosef

Credit Points: 1

1. Introduction to metal machining and manufacturing (class) – 3hrs:

- Introduction to metal machining processes and machine types.
- Tools used in milling
- Types of fixtures and workholding devices
- From conventional to CNC – what's different?
- Things that affect a part's cost – designing a part correctly

2. Gcode programming of a milling machine – 7 hrs:

- Machine setup, calculating machining speeds and feeds
- Basic commands for linear and arc moves
- Incremental and absolute mode programming
- Using of subroutines
- Implementation of tool radius compensation

3. Using CAM software to program CNC machines – 9hrs:

- Creating a UCS, Toolpath and a Tool Table
- Defining Part and Stock and creating 2.5D procedures
- Introduction to “smart” procedures
- Simulating the process and using a postprocessor to create the Gcode.

4. Introduction to Vertical Machining Center (VMC) - in the workshop – 1 hour:

- Homing the machine
- Setting the work offset
- Setting tool offsets
- Loading and running a program

Grade composition: 10% attendance and activity in class, 90% final project.