

Course Title	Course Code	Credit Hours
Manufacturing Processes and CNC Machines	AE-466	2-1

Textbooks:

- Walker, John R, “Modern Metal Working: Material Tools and Procedure”, Goodheart-Willcox Co
- Kalpakjian, “Manufacturing Process for Engineering Materials”, Pearson Education

Reference Book/Material:

- K G Swift & J D Booker, “Process Selection: From Design to Manufacture”, Elsevier Science
- Software Manual, “Turning for Windows”, INTELYS

Course Objectives:

This course provides students with an understanding of various Manufacturing techniques, including material removal, additive manufacturing, casting, forging, and cold forming. It covers concepts of rapid prototyping, ISO code development for CNC machines, and includes hands-on experience with CAD modeling, code generation, and simulation for CNC fabrication.

Course Outline:

- Introduction to Course and CNC Machines
- Introduction of Basic Machining Concepts: Tool Feed, Cutting Speed, Depth of Cut.
- High Speed CNC Machining
- Sand / Metal Casting
- Forging
- Cold Forming
- Welding Technique (Electric, Argon Arc, Spot Welding)
- Electric Discharge Machining (EDM)
- Rapid Prototyping and Rapid Tooling
- Reverse Engineering Tools