

SYLLABUS CURRICULUM

COURSE	Course Name : Manufacturing Process II
	Course Code : TM184623
	Credit : 3 sks
	Semester : VI

COURSE DESCRIPTION

This course discusses the basic concepts of non-conventional manufacturing processes and their classification. In this course is also discussed about the determination and selection of product manufacturing process parameters commonly used in the world of manufacturing industry, so that students can analyze and design the process of making products.

LEARNING OUTCOMES

LO6	Understand the engineering principles in mechanical system to identify, formulate and solve the problem of mechanical engineering.
LO9	Able to find the source of engineering problems in mechanical system through research that includes identification, formulation, analysis, data interpretation based on engineering principles.
LO10	Able to formulate the solution of engineering problem in mechanical system by considering economy, safety, environment and energy conservation.

COURSE LEARNING OUTCOMES

Students are able to understand the processes of making common products used in manufacturing industry, determine and select parameters of manufacturing process to analyse and design the product creation process, laboratory experiments and analyze the result, and have the ability of giving a question, opinion, and the answer, also good teamwork.

MAIN SUBJECT

The focus of this course are as follows:

- Non-conventional machining processes: abrasive process and water jet machining (AJM and WJM), electric discharge machining (EDM), electrochemical machining (ECM), electrochemical grinding (ECG), chemical machining (CHM) and rapid prototyping.
- Welding processes: shield metal arc welding (SMAW), acetylene gas welding (AGW), resistance welding (RW), brazing and soldering (B&S), tungsten inert gas (TIG), submerge arc welding (SAW), and plasma arc welding (PAW).
- Polymers and manufacturing process: extrusion, injection and blow molding.
- Casting processes: sand casting, centrifugal casting, die casting, and continuous casting.

PREREQUISITES

Manufacturing Process I

REFERENCE

1. Kalpakjian, Serope and Schmid, Steven R., Manufacturing Processes for Engineering Materials, 5th Edition, Prentice Hall, 2007
2. Pandey, P. C, Modern Machining Processes, Tata McGraw-Hill Publishing Company Limited, New Delhi, 1980.
3. Schey, John A., Introduction to Manufacturing Processes, 3rd Edition, Mc Graw-Hill, 1999
4. Groover, Mikell P, Fundamental of Modern Manufacturing, 4th Edition, John Wiley & Sons, Inc, 2010
5. McGeough, J.A., Advanced Methods of Machining, Chapman and Hall, 1988
6. Kalpakjian, Serope and Schmid, Steven R., Manufacturing Engineering & Technology, 7th Edition, Prentice Hall, 2013
7. De Garmo, Paul E., Material and Processes in Manufacturing, 7th Edition, Mc Millan Publishing Co, New York, 1988