

Faculty of Engineering & Technology

Production Technology

Information :

Course Code : MAN 121

Level : Undergraduate

Course Hours : 2.00- Hours

Department : Faculty of Engineering & Technology

Instructor Information :

Title	Name	Office hours
Lecturer	SAMAH ELSAYED ELMETWALLY ELKHATIB	1

Area Of Study :

This course aims at expanding the students' knowledge regarding the basic concepts of differential workshop hand tools, properties of material, classification and selection of materials, quality inspection and other aspects related to manufacturing. In addition, it stimulates students to understand the production technology concepts that provide a foundation for the different manufacturing processes in Engineering Science. Also, it allows students to work at their own level thereby developing confidence in general problems solving.

Description :

Introduction to production technology, Principle of Metals Casting, Casting Process and joining of metals, Bulk Metal Forming, forming processes (forging, bending, rolling, Sheet Metal Forming, Polymer Forming etc.), Machining Fundamentals and basic machining processes (turning, shaping, milling, drilling, grinding, etc.), Workshop Hand Tools, Properties of Material, Classification and Selection of Materials, Quality Inspection and other Aspects Related to Manufacturing.

Course outcomes :

a. Knowledge and Understanding: :

- 1 - Identify engineering material, classification, selection, properties and testing
- 2 - Explain the principles and techniques of casting process
- 3 - Explain the principles and different types of forming process
- 4 - Explain the principles and different types of machining process
- 5 - Explain the principles and different types of joining and inspection process
- 6 - Identify the different aspect is affecting process selection

b. Intellectual Skills: :

- 1 - Assign a proper material to a certain product
- 2 - Suggest a suitable manufacturing process to produce a certain product
- 3 - Suggest alternative solutions according to different given constrains
- 4 - Decide the important factors affecting material and process selection

c. Professional and Practical Skills: :

- 1 - Use safely and accurately simple workshop hand tools
- 2 - Use safely and accurately workshop equipment

3 - Analyze the required process selection factors

d.General and Transferable Skills: :

1 - Make Presentations

2 - Work as a part of a project team.

Course Topic And Contents :

Topic	No. of hours	Lecture	Tutorial / Practical
Introduction	4	2	2
Workshop Hand Tools	4	2	2
Properties of Material	4	2	2
Classification and Selection of Materials	4	2	2
Principle of Metals Casting	4	2	2
Casting Process	4	2	2
Principle of Metal Forming	4	2	2
Bulk Metal Forming	4	2	2
Sheet Metal Forming(resistance welding, spot, seam and projection welding)	4	2	2
Polymer Forming	4	2	2
Machining Fundamentals	4	2	2
Machining Processes	4	2	2
Joining of Metals	4	2	2
Revisionstandardization	4	2	2
Quality Inspection and other Aspects Related to Manufacturing	4	2	2

Teaching And Learning Methodologies :

Lecture

Research

Class Work

Course Assessment :

Methods of assessment	Relative weight %	Week No	Assess What
Assignments	10.00		
Final exam	40.00		
First Midterm Exam	20.00		
Performance & Participation	10.00		
Second Exam	20.00		

Course Notes :

Course Notes are available with all the slides used in lectures in electronic form on Learning Management System (Moodle)

Recommended books :

- M. Lal . O. P. Khanna, 1979, Text Book of Foundry Technology,
- John Campell, Casting, 2nd edition, Butterworth-Heinemann 2003----

Periodicals :

- Materials Handbook, v. 15 Casting, ASM Int., USA, 1998.
- Journal of Metals, ASM, USA

Web Sites :

- Websites on casting and websites on casting.