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	Sherif Fathy Ahmed Mehanny	0
technician	Abdel Samad Taha Mahmoud Ahmed Abdelkarim	
technician	Mohamed Mounir Mohamed Mousa Al wakeel	
technician	Ahmed Shafik Elsayed Sakr	

Area Of Study :

understand the basic concepts of all bulk production processes.
calculate the loads & energy or power required for machinig & forming processes.
determine the effect of each process parameter & material properties on stress & strain distributions in the deformed material during the forming process.
select the appropriate production technique for the production specific product.
understand the basic concepts of all metal welding processes.
assist & select a metal cutting process for specific components & products.
select the proper cutting process parameters to obtain the metal removal rate.

Description :

Engineering materials: material structure and properties, metallic alloys and equilibrium diagrams, Metal forming: casting, forging, rolling, drawing, extrusion and spinning, Welding and riveting: soldering, brazing, electric arc welding, cold pressure and friction welding, electric resistance welding, spot, seam and projection welding, Metal cutting: hand tools and machining processes, centre lathe, shaper and drill, Measuring instruments, lengths and angles, specifications and standardization, Elements of production management systems and cost of production.

Course outcomes :

a.Knowledge and Understanding: :	
1 -	know the advantages & disadvantages of all production & forming processes.
2 -	know the concept & operation of equipment used in metal forming,cutting,welding processes.
3 -	understand the effects of friction & lubrication in metal forming process.
4 -	know how to choose the suitable material for a specific application.
5 -	Understand the origin of common type of defects encountered during forming and to know the methods of elimination of such defect to manufacture sound products
6 -	Understand the origin and to know the methods of elimination of
b.Intellectual Skills: :	
1 -	- Calculate the machining load, torque, power, and time using simple methods

2 -	Know the importance of hot and cold forming processes
3 -	Explain the equipment used for metal forming processes and cutting processes and its functions.
4 -	- Determine the process parameters to give the optimal machining and forming condition
c.Professional and Practical Skills: :	
1 -	Suggest an appropriate production technique for a specific application
2 -	Identify the defects in formed parts, and to suggest the method of elimination
3 -	Adjust process variables to achieve specific results
d.General and Transferable Skills: :	
1 -	Use the internet to know new topics
2 -	Correlate the quality with the method of production

Course Topic And Contents :

Topic	No. of hours	Lecture	Tutorial / Practical
The nature of materials,	4	2	2
Mechanical behavior and properties of materials	4	2	2
Alloys, phase diagrams	4	2	2
Metal casting processes	4	2	2
Metal forming processes (rolling, forging, extrusion)	4	2	2
Metal forming processes (drawing, sheet metal working)	4	2	2
First midterm exam			
Welding and riveting (soldering, brazing, electric arc welding)	4	2	2
Welding and riveting (cold pressure and friction welding, electric resistance welding, spot, seam and projection welding)	4	2	2
Metal cutting (turning)	4	2	2
Second midterm exam			
Metal cutting (milling)	4	2	2
Metal cutting (shaping, drilling)	4	2	2
Measuring instruments, lengths and angles , specifications and standardization	4	2	2
Final exam			

Teaching And Learning Methodologies :

Whiteboard and coloured markers
Power point data show
Workshop training and a field excursions
Library visits and research papers using the internet

Course Assessment :

Methods of assessment	Relative weight %	Week No	Assess What
Final exam	60.00	15	I ntellectual skills, Professional skills, General
First midterm	15.00	7	Knowledge and understanding, I ntellectual
Second Mid-term	15.00	11	Knowledge and understanding, I ntellectual
Workshop exam	10.00	1	Professional skills, Knowledge and

Course Notes :

notes & handouts

Recommended books :

Fundamental of Modern Manufacturing ,
Mikell P. Groover
Prentice Hall ,2010