

Discipline:
Mechanical

Semester: 6th

Name of the faculty:

Er. Kamakanta Nayak

Subject:

No. of days/
week class: 05

Semester From: 05/04/21
to: 30/06/21

Advance Manufacturing
process

Week	Class day	Theory Topics
5 th April to	1 st	Introduction of modern machining process and comparison with traditional machining.
10 th April	2 nd	principle of Ultrasonic machining
	3 rd	Description of equipment of USM
	4 th	Advantages, disadvantages and application of USM.
	5 th	principle and description of equipment of electric discharge machining (EDM)
12 th April to	1 st	Dielectric fluid, tools (electrodes) of EDM
17 th April	2 nd	process parameters, output characteristics of EDM
	3 rd	MAHA VISUBA SANKRANTI
	4 th	Advantages, disadvantages and applications of EDM
	5 th	principle and description of equipment of wire cut EDM.
19 th April to	1 st	controlling parameters and applications of wire cut EDM
24 th April	2 nd	principle and description of equipment of Abrasive jet machining (AJM)
	3 rd	RAM NAVAMI
	4 th	Material removal rate (MRR) and application of AJM
	5 th	principle and description of equipment

Week	Class day	Theory Topics
		of Laser beam machining (LBM)
26th April	1st	material removal rate (MRR) and application of LBM
to	2nd	principle and description of equipment of electro chemical machining (ECM)
1st May	3rd	material removal rate (MRR) and applications of ECM
	4th	principle and description of equipment of plasma arc machining
	5th	material removal rate (MRR) and process parameters of PAM
	1st	performance characterization and application of PAM.
3rd May	2nd	principle and description of equipment of electron beam machining (EBM)
to	3rd	material removal rate (MRR) and process parameters of EBM.
8th May	4th	performance characterization and application of EBM.
	5th	Introduction of plastic processing
	1st	moulding processes: injection moulding
10th May	2nd	compression moulding
to	3rd	Transfer moulding
15th May	4th	Extruding, casting
	5th	DI-DIE-FITRE

Week	Class day	Theory Topics
	1st	Calendering
17th May	2nd	Fabrication methods - sheet forming
to	3rd	Blow moulding, Laminating plastics (sheets, rods and tubes)
22nd May	4th	Reinforcing
	5th	Applications of plastics
	1st	Introduction of additive manufacturing process
24th May	2nd	Need for additive manufacturing
to	3rd	Fundamentals of additive manufacturing.
29th May	4th	AM process chain
	5th	Advantages and limitations of AM
	1st	Classification of AM process
31st May	2nd	Fundamental automated processes
to	3rd	Distinction between AM and CNC and other related technologies
5th June	4th	Applications of AM in design and aerospace industry
	5th	Application of AM in automotive industry, Sewing industry and in art and architecture
	1st	Application of AM in RP medical and Bioengineering
7th June	2nd	Web based Rapid prototyping systems
to	3rd	concept of flexible manufacturing system
12th June	4th	SABITRI AMBASIA

Week	Class day	Theory Topics
	5th	concurrent engineering
14th June to 19th June	1st	production tools like capstan and turret lathes.
	2nd	RAJA, SANKRANTI
	3rd	Rapid prototyping processes
	4th	special purpose machines (SPM)
	5th	General elements of SPM
21st June to 26th June	1st	productivity improvement by SPM
	2nd	principles of SPM design
	3rd	Maintenance of machine tools
	4th	Types of maintenance, Repair cycle analysis, Repair complexity
	5th	Maintenance manual, maintenance records
28th June to 30th June	1st	House keeping, Introduction to total productive maintenance (TPM)
	2nd	Revision
	3rd	Revision

~~Signature~~
05/04/2021

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