

LESSON PLAN

SUB: ADVANCE MANUFACTURING PROCESSES

BRANCH:- MECHANICAL ENGG.

SEMESTER: 6th

NAME OF FACULTY: ER. SUJIT KUMAR PUHAN

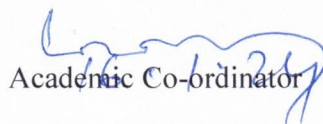


GOVERNMENT POLYTECHNIC,
BHADRAK

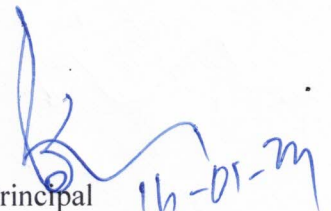
SESSION:2023-24


16.01.24

Hod ,Mechanical


16.01.24

Academic Co-ordinator


16-01-24

Principal
Govt. Polytechnic, Bhadrak

Discipline: <u>MECHANICAL</u> <u>ENGG</u>	Semester : <u>6th</u>	Name of the Teaching Faculty: <u>SUJIT KUMAR</u> <u>PUHAN</u> <u>GF, Mechanical Engg</u>
Subject <u>AMP</u>	No. of days/perweek class allotted: <u>4</u>	Semester From date: <u>16.01.2024</u> To date: <u>26.04.2024</u> No of weeks: <u>15</u>
Week	Class Day	Theory Topics:
1 st	1 st	Modern Machining Processes: Introduction – comparison with traditional machining
	2 nd	Ultrasonic Machining: principle, Description of equipment, applications.
	3 rd	Ultrasonic Machining: principle, Description of equipment, applications.
	4 th	Electric Discharge Machining: Principle, Description of equipmen
2 nd	1 st	Electric Discharge Machining: Principle, Description of equipmen
	2 nd	Electric Discharge Machining: Principle, Description of equipment, Dielectric fluid, tools (electrodes), Process parameters, Output characteristics, appl
	3 rd	Electric Discharge Machining: Principle, Description of equipment, Dielectric fluid, tools (electrodes), Process parameters, Output characteristics, appl
	4 th	Electric Discharge Machining: Principle, Description of equipment, Dielectric fluid, tools (electrodes), Process parameters, Output characteristics, appl
3 rd	1 st	Wire cut EDM: Principle, Description of equipment, controlling paramete
	2 nd	Wire cut EDM: Principle, Description of equipment, controlling paramete
	3 rd	Wire cut EDM: Principle, Description of equipment, controlling paramete
	4 th	Abrasive Jet Machining: principle, description of equipment, Material removal rate, application.
4 th	1 st	Abrasive Jet Machining: principle, description of equipment, Material removal rate, application
	2 nd	Abrasive Jet Machining: principle, description of equipment, Material removal rate, application
	3 rd	Abrasive Jet Machining: principle, description of equipment, Material removal rate, application
	4 th	Laser Beam Machining: principle, description of equipment, Material removal rate, applica
	1 st	Laser Beam Machining: principle, description of equipment, Material removal rate, applica

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5 th	2 nd	Electro Chemical Machining: principle, description of equipment, Material removal rate, application.
	3 rd	Plasma Arc Machining – principle, description of equipment, Material removal rate, Process par
	4 th	Electron Beam Machining - principle, description of equipment, Material removal rate, Process parameters,
6 th	1 st	Plastic Processing: Processing of plastics.
	2 nd	Moulding processes: Injection moulding, Compression moulding, Transfer moulding.
	3 rd	Moulding processes: Injection moulding, Compression moulding, Transfer moulding.
	4 th	Moulding processes: Injection moulding, Compression moulding, Transfer moulding.
7 th	1 st	Extruding; Casting; Calendering.
	2 nd	Extruding; Casting; Calendering.
	3 rd	Fabrication methods-Sheet forming, Blow moulding, Laminating plastics (sheets, rods & tubes), Reinforcing.
	4 th	CLASS TEST
8 th	1 st	Fabrication methods-Sheet forming, Blow moulding, Laminating plastics (sheets, rods & tubes), Reinforcing.
	2 nd	Applications of Plastics.
	3 rd	Additive Manufacturing Process: Introduction, Need for Additive Manufacturing
	4 th	Fundamentals of Additive Manufacturing, AM Process Chain
9 th	1 st	Advantages and Limitations of AM, Commonly used Terms
	2 nd	Advantages and Limitations of AM, Commonly used Terms
	3 rd	Classification of AM process, Fundamental Automated Processes, Distinction between AM and CNC, other related technologies.
	4 th	Classification of AM process, Fundamental Automated Processes, Distinction between AM and CNC, other related technologies.
10 th	1 st	Application –Application in Design, Aerospace Industry, Automotive Industry, Jewelry Industry, Arts and Architecture. RP Medical and Bioengineering Applications.
	2 nd	Application –Application in Design, Aerospace Industry, Automotive Industry, Jewelry Industry, Arts and Architecture. RP Medical and Bioengineering Applications.
	3 rd	Web Based Rapid Prototyping Systems.
	4 th	Web Based Rapid Prototyping Systems.
	1 st	Concept of Flexible manufacturing process, concurrent engineering, production tools like capstan and turret lathes, rapid prototyping processes.

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11 th	2 nd	Concept of Flexible manufacturing process, concurrent engineering, production tools like capstan and turret lathes, rapid prototyping processes.
	3 rd	Concept of Flexible manufacturing process, concurrent engineering, production tools like capstan and turret lathes, rapid prototyping processes.
	4 th	Concept of Flexible manufacturing process, concurrent engineering, production tools like capstan and turret lathes, rapid prototyping processes.
12 th	1 st	Special Purpose Machines (SPM):
	2 nd	Concept, General elements of SPM, Productivity improvement by SPM, Principles of SPM design.
	3 rd	CLASS TEST.
	4 th	Concept, General elements of SPM, Productivity improvement by SPM, Principles of SPM design.
13 th	1 st	Concept, General elements of SPM, Productivity improvement by SPM, Principles of SPM design.
	2 nd	Maintenance of Machine Tools:
	3 rd	Types of maintenance, Repair cycle analysis, Repair complexity, Maintenance manual, Maintenance records, Housekeeping. Introduction to Total Productive Maintenance (TPM).
	4 th	Types of maintenance, Repair cycle analysis, Repair complexity, Maintenance manual, Maintenance records, Housekeeping. Introduction to Total Productive Maintenance (TPM).
14 th	1 st	Types of maintenance, Repair cycle analysis, Repair complexity, Maintenance manual, Maintenance records, Housekeeping. Introduction to Total Productive Maintenance (TPM).
	2 nd	Types of maintenance, Repair cycle analysis, Repair complexity, Maintenance manual, Maintenance records, Housekeeping. Introduction to Total Productive Maintenance (TPM).
	3 rd	Types of maintenance, Repair cycle analysis, Repair complexity, Maintenance manual, Maintenance records, Housekeeping. Introduction to Total Productive Maintenance (TPM).
	4 th	Discussion of PYQS
15 th	1 st	Discussion of PYQS
	2 nd	Discussion of PYQS
	3 rd	Extra class for weak student
	4 th	Extra class for weak student

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