GANDHI SCHOOL OF ENGINEERING
BHABANDHA, BERHAMPUR
SESSION PLAN
6TH SEMESTER, BRANCH-MECHANICAL(GROUP 1)

TH 4b. ADVANCE MANUFACTURING PROCESSES

Name of the Faculty – PROF. LAKSHMI NARAYANA PANDA

Topics to be taken						
SL NO & CHAPTER	**No. of Periods assigned by SCTE & VT**	**Details of the topics**	**PLANNED DATE**	**Details of the topics**	**ACTUAL DATE**	**Remarks**
1. Modern Machining Processes	**20**	1.1 Introduction – comparison with traditional machining. 1.2 Ultrasonic Machining: principle, Description of equipment, applications. 1.3 Electric Discharge Machining: Principle, Description of equipment, Dielectric fluid, tools (electrodes), Process parameters, Output characteristics, applications. 1.4 Wire cut EDM: Principle, Description of equipment, controlling parameters; applications. 1.5 Abrasive Jet Machining: principle, description of equipment, Material removal rate, application. 1.5 Laser Beam Machining: principle, description of equipment, Material removal rate, application. 1.6 Electro Chemical Machining: principle, description of equipment, Material removal rate, application. 1.7 Plasma Arc Machining – principle, description of equipment, Material removal rate, Process parameters, performance characterization, Applications. 1.8 Electron Beam Machining - principle, description of equipment, Material removal rate, Process parameters, performance characterization, Applications.	**19.01.2024 TO 21.02.2024**	1.1 Introduction – comparison with traditional machining. 1.2 Ultrasonic Machining: principle, Description of equipment, applications. 1.3 Electric Discharge Machining: Principle, Description of equipment, Dielectric fluid, tools (electrodes), Process parameters, Output characteristics, applications. 1.4 Wire cut EDM: Principle, Description of equipment, controlling parameters; applications. 1.5 Abrasive Jet Machining: principle, description of equipment, Material removal rate, application. 1.5 Laser Beam Machining: principle, description of equipment, Material removal rate, application. 1.6 Electro Chemical Machining: principle, description of equipment, Material removal rate, application. 1.7 Plasma Arc Machining – principle, description of equipment, Material removal rate, Process parameters, performance characterization, Applications. 1.8 Electron Beam Machining - principle, description of equipment, Material removal rate, Process parameters, performance characterization, Applications.	**19.01.2024** **20.01.2024** **24.01.2024** **30.01.2024** **31.01.2024** **2.02.2024** **3.02.2024** **6.02.2024** **7.02.2024** **9.02.2024** **10.02.2024** **13.02.2024** **16.02.2024** **17.02.2024** **20.02.2024** **21.02.2024**	

2. Plastic Processing	**10**	2.1 Processing of plastics. 2.2 Moulding processes: Injection moulding, Compression moulding, Transfer moulding. 2.3 Extruding; Casting; Calendering. 2.4 Fabrication methods-Sheet forming, Blow moulding, Laminating plastics (sheets, rods & tubes), Reinforcing. 2.5 Applications of Plastics	**23.02.2024 TO 12.03.2024**	2.1 Processing of plastics. 2.2 Moulding processes: Injection moulding, Compression moulding, Transfer moulding. 2.3 Extruding; Casting; Calendering. 2.4 Fabrication methods-Sheet forming, Blow moulding, Laminating plastics (sheets, rods & tubes), Reinforcing. 2.5 Applications of Plastics	**23.02.2024** **24.02.2024** **27.02.2024** **28.02.2024** **1.03.2024** **2.03.2024** **6.03.2024** **12.03.2024**	

3. Additive Manufacturing Process	**15**	3.1 Introduction, Need for Additive Manufacturing 3.2 Fundamentals of Additive Manufacturing, AM Process Chain 3.3 Advantages and Limitations of AM, Commonly used Terms 3.4 Classification of AM process, Fundamental Automated Processes, Distinction between AM and CNC, other related technologies. 3.5 Application –Application in Design, Aerospace Industry, Automotive Industry, Jewelry Industry, Arts and Architecture. RP Medical and Bioengineering Applications. 3.6 Web Based Rapid Prototyping Systems. 3.7 Concept of Flexible manufacturing process, concurrent engineering, production tools like capstan and turret lathes, rapid prototyping processes.	**13.03.2024 TO 3.04.2024**	3.1 Introduction, Need for Additive Manufacturing 3.2 Fundamentals of Additive Manufacturing, AM Process Chain 3.3 Advantages and Limitations of AM, Commonly used Terms 3.4 Classification of AM process, Fundamental Automated Processes, Distinction between AM and CNC, other related technologies. 3.5 Application –Application in Design, Aerospace Industry, Automotive Industry, Jewelry Industry, Arts and Architecture. RP Medical and Bioengineering Applications. 3.6 Web Based Rapid Prototyping Systems. 3.7 Concept of Flexible manufacturing process, concurrent engineering, production tools like capstan and turret lathes, rapid prototyping processes.	**13.03.2024** **15.03.2024** **16.03.2024** **19.03.2024** **20.03.2024** **22.03.2024** **23.03.2024** **27.03.2024** **30.03.2024** **2.04.2024** **3.04.2024**	

4. Special Purpose Machines (SPM)	**7**	4.1 Concept, General elements of SPM, Productivity improvement by SPM, Principles of SPM design.	**5.04.2024 TO 12.04.2024**	4.1 Concept, General elements of SPM, Productivity improvement by SPM, Principles of SPM design.	**5.04.2024 6.04.2024 9.04.2024 10.04.2024 12.04.2024**	
5. Maintenance of Machine Tools	**8**	5.1 Types of maintenance, Repair cycle analysis, Repair complexity, Maintenance manual, Maintenance records, Housekeeping. Introduction to Total Productive Maintenance (TPM)	**13.04.2024 TO 24.04.2024**	5.1 Types of maintenance, Repair cycle analysis, Repair complexity, Maintenance manual, Maintenance records, Housekeeping. Introduction to Total Productive Maintenance (TPM)	**13.04.2024 16.04.2024 17.04.2024 19.04.2024 20.04.2024 23.04.2024 24.04.2024**	

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SESSION PLAN
6TH SEMESTER, BRANCH-MECHANICAL(GROUP 2)

TH 4b. ADVANCE MANUFACTURING PROCESSES

Name of the Faculty – ER. BEDA PRAKASH NAYAK

Topics to be taken						
SL NO & CHAPTER	**No. of Periods assigned by SCTE & VT**	**Details of the topics**	**PLANNED DATE**	**Details of the topics**	**ACTUAL DATE**	**Remarks**
1. Modern Machining Processes	**20**	1.1 Introduction – comparison with traditional machining. 1.2 Ultrasonic Machining: principle, Description of equipment, applications. 1.3 Electric Discharge Machining: Principle, Description of equipment, Dielectric fluid, tools (electrodes), Process parameters, Output characteristics, applications. 1.4 Wire cut EDM: Principle, Description of equipment, controlling parameters; applications. 1.5 Abrasive Jet Machining: principle, description of equipment, Material removal rate, application. 1.5 Laser Beam Machining: principle, description of equipment, Material removal rate, application. 1.6 Electro Chemical Machining: principle, description of equipment, Material removal rate, application. 1.7 Plasma Arc Machining – principle, description of equipment, Material removal rate, Process parameters, performance characterization, Applications. 1.8 Electron Beam Machining - principle, description of equipment, Material removal rate, Process parameters, performance characterization, Applications.	**18.01.2024 TO 15.03.2024**	1.1 Introduction – comparison with traditional machining. 1.2 Ultrasonic Machining: principle, Description of equipment, applications. 1.3 Electric Discharge Machining: Principle, Description of equipment, Dielectric fluid, tools (electrodes), Process parameters, Output characteristics, applications. 1.4 Wire cut EDM: Principle, Description of equipment, controlling parameters; applications. 1.5 Abrasive Jet Machining: principle, description of equipment, Material removal rate, application. 1.5 Laser Beam Machining: principle, description of equipment, Material removal rate, application. 1.6 Electro Chemical Machining: principle, description of equipment, Material removal rate, application. 1.7 Plasma Arc Machining – principle, description of equipment, Material removal rate, Process parameters, performance characterization, Applications. 1.8 Electron Beam Machining - principle, description of equipment, Material removal rate, Process parameters, performance characterization, Applications.	**18.01.2024** **19.01.2024** **25.01.2024** **1.02.2024** **2.02.2024** **8.02.2024** **9.02.2024** **15.02.2024** **16.02.2024** **22.02.2024** **23.02.2024** **29.02.2024** **1.03.2024** **7.03.2024** **14.03.2024** **15.03.2024**	

2. Plastic Processing	**10**	2.1 Processing of plastics. 2.2 Moulding processes: Injection moulding, Compression moulding, Transfer moulding. 2.3 Extruding; Casting; Calendering. 2.4 Fabrication methods-Sheet forming, Blow moulding, Laminating plastics (sheets, rods & tubes), Reinforcing. 2.5 Applications of Plastics	**21.03.2024 TO 19.04.2024**	2.1 Processing of plastics. 2.2 Moulding processes: Injection moulding, Compression moulding, Transfer moulding. 2.3 Extruding; Casting; Calendering. 2.4 Fabrication methods-Sheet forming, Blow moulding, Laminating plastics (sheets, rods & tubes), Reinforcing. 2.5 Applications of Plastics	**21.03.2024** **22.03.2024** **28.03.2024** **4.04.2024** **5.04.2024** **12.04.2024** **18.04.2024** **19.04.2024**	

Beka Prakash Nayak.

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Name of the Faculty – ER. MANASI BHOI						
Topics to be taken						
3. Additive Manufacturing Process	**15**	3.1 Introduction, Need for Additive Manufacturing 3.2 Fundamentals of Additive Manufacturing, AM Process Chain 3.3 Advantages and Limitations of AM, Commonly used Terms 3.4 Classification of AM process, Fundamental Automated Processes, Distinction between AM and CNC, other related technologies. 3.5 Application –Application in Design, Aerospace Industry, Automotive Industry, Jewelry Industry, Arts and Architecture. RP Medical and Bioengineering Applications. 3.6 Web Based Rapid Prototyping Systems. 3.7 Concept of Flexible manufacturing process, concurrent engineering, production tools like capstan and turret lathes, rapid prototyping processes.	**23.01.2024 TO 28.02.2024**	3.1 Introduction, Need for Additive Manufacturing 3.2 Fundamentals of Additive Manufacturing, AM Process Chain 3.3 Advantages and Limitations of AM, Commonly used Terms 3.4 Classification of AM process, Fundamental Automated Processes, Distinction between AM and CNC, other related technologies. 3.5 Application –Application in Design, Aerospace Industry, Automotive Industry, Jewelry Industry, Arts and Architecture. RP Medical and Bioengineering Applications. 3.6 Web Based Rapid Prototyping Systems. 3.7 Concept of Flexible manufacturing process, concurrent engineering, production tools like capstan and turret lathes, rapid prototyping processes.	**23.01.2024** **24.01.2024** **30.01.2024** **31.01.2024** **6.02.2024** **7.02.2024** **13.02.2024** **20.02.2024** **21.02.2024** **27.02.2024** **28.02.2024**	

4. Special Purpose Machines (SPM)	**7**	4.1 Concept, General elements of SPM, Productivity improvement by SPM, Principles of SPM design.	**5.03.2024 TO 19.03.2024**	4.1 Concept, General elements of SPM, Productivity improvement by SPM, Principles of SPM design.	**5.03.2024 6.03.2024 12.03.2024 13.03.2024 19.03.2024**	
5. Maintenance of Machine Tools	**8**	5.1 Types of maintenance, Repair cycle analysis, Repair complexity, Maintenance manual, Maintenance records, Housekeeping. Introduction to Total Productive Maintenance (TPM)	**20.03.2024 TO 24.04.2024**	5.1 Types of maintenance, Repair cycle analysis, Repair complexity, Maintenance manual, Maintenance records, Housekeeping. Introduction to Total Productive Maintenance (TPM) Revision-	**20.03.2024 27.03.2024 2.04.2024 3.04.2024 9.04.2024 10.04.2024 16.04.2024 17.04.2024 23.04.2024 24.04.2024**	

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