**LESSON PLAN**

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| **Discipline:**Mechanical Engg. | **Semester:**Sixth(6th ) | **Name Of The Faculty:** Er Subhrakanta Nayak |
| **Subject:**Advanced manufacturing process. Th.-4(b) | **No of days/ week class allotted:**Six(6) | **Semester from date:** 16.01.2024 **to Date:** 26.04.2024**No of weeks: 15** |
| **WEEK** | **CLASS DAY** | **THEORY TOPICS** |
| 1st | 1st  | Introduction: Comparison with traditional machining. |
| 2nd  | Ultrasonic Machining: principle, Description of equipment, |
| 3rd  | Area of Applications |
| 4th  | Electric Discharge Machining |
| 5th  | Working principle, Description of equipment, |
| 6th  | Dielectric Fluid, tools (electrodes), Process parameters,  |
| 2nd | 1st  | output characteristics & Applications |
| 2nd  | Wire cut EDM Working principle |
| 3rd  | Description of equipment,  |
| 4th  | controlling parameters & Applications |
| 5th  | Abrasive jet machining -Working principle |
| 6th  | Material removal rate |
| 3rd | 1st  | Area of Application |
| 2nd  | Laser beam machining processDescription of equipment. |
| 3rd  | Material removal rate |
| 4th  | Area of Application |
| 5th  | Electro chemical machining process,Working principle |
| 6th  | Material removal rate |
| 4th | 1st  | Area of Application |
| 2nd  | Plasma arc machining process, working principle |
| 3rd  | Material removal rate |
| 4th  | Area of Application |
| 5th  | **Monthly test 01** |
| 6th  | Electron Beam machining- Principle description of equipment |
| 5th | 1st  | Material removal rate, Process parameters |
| 2nd  | Performance characteristics & Area of Application |
| 3rd  | **Review class** |
| 4th  | **Review class** |
| 5th  | **Review class** |
| 6th  | **Review class** |
| 6th | 1st  | Processing of plastics |
| 2nd  | Moulding processes: Injection moulding |
| 3rd  | Compression moulding |
| 4th  | Transfer moulding |
| 5th  | Extruding; Casting; Calendaring |
| 6th  | Fabrication methods-Sheet forming, Blow moulding |
| 7th | 1st  | Laminating plastics (sheets, rods & tubes) |
| 2nd  | Reinforcing. |
| 3rd  | Applications of Plastics |
| 4th  | **Review class** |
| 5th  | **Review class** |
| 6th  | **Monthly test 02** |
| 8th | 1st  | Introduction; Need for Additive Manufacturing Process |
| 2nd  | Fundamentals of Additive Manufacturing, AM Process Chain |
| 3rd  | Advantages and Limitations of AM, commonly used Terms |
| 4th  | Classification of AM process, Fundamental Automated Processes |
| 5th  | Distinction between AM and CNC, other related technologies |
| 6th  | Application –Application in Design, Aerospace Industry |
| 9th | 1st  | Automotive Industry, Jewellery Industry, Arts and Architecture |
| 2nd  | RP Medical and Bioengineering Applications |
| 3rd  | Web Based Rapid Prototyping Systems |
| 4th  | **Monthly test 03** |
| 5th  | Concept of Flexible manufacturing process, concurrent engineering. |
| 6th  | production tools like capstan and turret lathes |
| 10th | 1st  | rapid prototyping processes |
| 2nd  | **Review class** |
| 3rd  | **Review class** |
| 4th  | Concept |
| 5th  | General elements of SPM |
| 6th  | Productivity improvement by SPM |
| 11th | 1st  | Cont… |
| 2nd  | Principles of SPM design. |
| 3rd  | Cont… |
| 4th  | **Review class** |
| 5th  | **Review class** |
| 6th  | Types of maintenance |
| 12th | 1st  | Repair cycle analysis |
| 2nd  | Repair complexity |
| 3rd  | Maintenance manual |
| 4th  | Maintenance records |
| 5th  | Housekeeping |
| 6th  | Introduction to Total Productive Maintenance (TPM) |
| 13th | 1st  | Cont. |
| 2nd  | **Review class** |
| 3rd  | **Review class** |
| 4th  | Review class chapter no -01 |
| 5th  | Review class chapter no -01 |
| 6th  | Review class chapter no -01 |
| 14th  | 1st  | Review class chapter no -02 |
| 2nd  | Review class chapter no -02 |
| 3rd  | Review class chapter no -02 |
| 4th  | Review class chapter no -03 |
| 5th  | Review class chapter no -03 |
| 6th  | Review class chapter no -03 |
| 15th  | 1st  | Review class chapter no -04 |
| 2nd  | Review class chapter no -04 |
| 3rd  | Review class chapter no -04 |
| 4th  | Review class chapter no -05 |
| 5th  | Review class chapter no -05 |
| 6th  | Review class chapter no -05 |