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| **Discipline:-MECHANICAL ENGG.** | **SEM:-6TH** | **Name of Teaching Faculty:- Saurav Ranjan Pradhan** |
| **SUB:-Advance Manufacturing & CAD/CAM** | **No of Days /per week class allotted:-4** | **Semester From Date:-02.01.19 To Date:-15.04.19 ,No of Weeks:-12** |
| **Week** | **Class Day** | **Theory Topics** |
| 1ST | 1st | Introduction, Traditional & Nontraditional machining process |
| 2nd | Working principle of Electro chemical machining process |
| 3rd |  Advantages, disadvantages and area of application of Electro chemical machining process |
| 4th | Working principle of Electro discharge machining process |
| 2ND | 1st | Advantages, disadvantages and area of application of Electro discharge machining process |
| 2nd | Working principle of Plasma arc machining process |
| 3rd | Advantages, disadvantages and area of application of Plasma arc machining process |
| 4th | Working principle of Laser beam machining process  |
| 3RD | 1st | Advantages, disadvantages and area of application of Laser beam machining process  |
| 2nd | Working principle of Abrasive jet machining process |
| 3rd | Advantages, disadvantages and area of application of Abrasive jet machining process |
| 4th | Working principle of Electron beam machining process |
| 4TH | 1st | Advantages, disadvantages and area of application of Electron beam machining process |
| 2nd | Discussion of Chapter-1 & Assignment Questions |
| 3rd |  Automation, need for Automation |
| 4th | List types of Automation  |
| 5TH | 1st | Discussion of Chapter- 2 & Assignment Questions |
| 2nd |  Numerical control , Difference between conventional & NC m/c tools |
| 3rd |  NC system with block diagram |
| 4th | Continue…. NC system with block diagram |
| 6TH | 1st | Types of NC co-ordinate: Point – to – point, Straight Cut, and Contouring |
| 2nd | NC part programming: G code  |
| 3rd | NC part programming: M-code |
| 4th | Machine Zero, Work zero, Tool zero & Tool offset |
| 7TH | 1st | Part program for lathe |
| 2nd | DNC (Direct numerical Control) |
| 3rd | CNC (Computer numerical Control) |
| 4th | Adaptive Control |
| 8TH | 1st | Discussion of Chapter- 3 & Assignment Questions |
| 2nd | Robot, Fields of application of robots |
| 3rd |  Robot anatomy |
| 4th | Continue…. Robot anatomy |
| 9TH | 1st | Describe Robot Configuration |
| 2nd | Continue….Robot Configuration |
| 3rd | Various types of end effectors |
| 4th | Discussion of Chapter- 4 & Assignment Questions |
| 10TH | 1st | Flexible Manufacturing System (FMS),Need for FMS |
| 2nd | Components of FMS:-Processing Station |
| 3rd |  Material handling & storage  |
| 4th |  Computer Control System. |
| 11TH | 1st | Discussion of Chapter- 5 & Assignment Questions |
| 2nd |  CAD, CAM and CIM,benefits of CAD |
| 3rd |  CAD software and hardware |
| 4th | CAM, benefits of CAM, differentiate between CAD and CAM  |
| 12TH | 1st |  Software and hardware of CIM |
| 2nd | Discussion of Chapter- 6 & Assignment Questions |
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| **Faculty Signature HOD Academic Co-ordinator** |
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|  **PRINCIPAL**  |
| **Govt. Polytechnic,Puri** |