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| **Discipline: Mechanical**  **Engineering** | **Semester :**  **4th Semester-2022-23** | **Name of the Teaching Faculty: Shri Arun kumar Sahu, Ptgf mechanical**  **engineering** |  |
| **Subject: MANUFACTURING TECHNOLOGY** | **No. of Days/week Class Allotted: 60** | **Semester from date: 14/02/ 2023 to date: 27/05/2023 No of weeks: 18** |  |
| **week** | **Class Day** | **Theory Topics** |  |
| 1st | 1st | Composition of various tool materials |  |
| 2nd | Physical properties& uses of such tool materials. |  |
| 3rd | Cutting action of various and tools such as Chisel, hacksaw blade, dies and reamer |  |
| 4th | Turning tool geometry and purpose of tool angle |  |
| 2nd | 1st | Machining process parameters (Speed, feed and depth of cut) |  |
| 2nd | Coolants and lubricants in machining and purpose |  |
| 3rd | Construction and working of lathe and CNC lathe |  |
| 4th | Major components of a lathe and their function |  |
| 3rd | 1st | Operations carried out in a lathe(Turning, thread cutting, taper turning, internal machining, parting off, facing, knurling) |  |
| 2nd | Safety measures during machining |  |
| 3rd | Capstan lathe  Difference with respect to engine lathe |  |
| 4th | Major components and their function |  |
| 4th | 1st | Define multiple tool holders |  |
| 2nd | Turret Lathe  Difference with respect to capstan lathe |  |
| 3rd | Major components and their function |  |
| 4th | Draw the tooling layout for preparation of a hexagonal bolt &bush |  |
| 5th | 1st | Shaper  Potential application areas of a shaper machine |  |
| 2nd | Major components and their function |  |
| 3rd | Explain the automatic able feed mechanism |  |
| 4th | Explain the construction &working of tool head |  |
| 6th | 1st | Explain the quick return mechanism through sketch |  |
| 2nd | State the specification of a shaping machine. |  |
| 3rd | Application area of a planer and its difference with respect to shaper |  |
| 4th | Major components and their functions |  |
| 7th | 1st | The table drive mechanism |  |

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|  | 2nd | Working of tool and tool support |  |
| 3rd | Clamping of work through sketch |  |
| 4th | Types of milling machine and operations performed by them |  |
| 8th | 1st | CNC milling machine |  |
| 2nd | Explain work holding attachment |  |
| 3rd | Construction & working of simple dividing head, universal dividing head |  |
| 4th | Procedure of simple and compound indexing |  |
| 9th | 1st | Illustration of different indexing methods |  |
| 2nd | Major components and their function |  |
| 3rd | Construction and working of slotter machine |  |
| 4th | Tools used in slotter |  |
| 10th | 1st | Significance of grinding operations |  |
| 2nd | Manufacturing of grinding wheels |  |
| 3rd | Criteria for selecting of grinding wheels |  |
| 4th | Specification of grinding wheels with example |  |
| 11th | 1st | Working of Cylindrical Grinder |  |
| 2nd | Surface Grinder Centreless Grinder |  |
| 3rd | Bench drilling machine Pillar drilling machine |  |
| 4th | Radial drilling machine |  |
| 12th | 1st | Basic Principle of Boring |  |
| 2nd | Different between Boring and drilling |  |
| 3rd | Types of Broaching(pull type, push type) |  |
| 4th | Advantages of Broaching and applications |  |
| 13th | 1st | Definition of Surface finish |  |
| 2nd | Description of lapping& explain their specific cutting |  |
| 3rd | Revision of Chapter – 1 |  |
| 4th | Revision of Chapter – 2. 1-2.3 |  |
| 14th | 1st | Revision of Chapter – 2.4-2.6 |  |
| 2nd | Revision of Chapter – 3.1,3.2 |  |
| 3rd | Revision of Chapter – 3.3,3.4 |  |
| 4th | Revision of Chapter – 4.1,4.2 |  |
| 15th | 1st | Revision of Chapter – 4.3,4.4 |  |
| 2nd | Revision of Chapter – 4.5,4.6 |  |
| 3rd | Revision of Chapter – 5.1,5.2 |  |
| 4th | Revision of Chapter – 5.3,5.4,5.5 |  |

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| 16th | 1st | Revision of Chapter – 6.1,6.2,6.3 |  |
| 2nd | Revision of Chapter – 6.4,6.5 |  |
| 3rd | Revision of Chapter – 7 |  |
| 4th | Revision of Chapter – 8 |  |
| 17th | 1st | Revision of Chapter – 9 |  |
| 2nd | Revision of Chapter – 10 |  |
| 3rd | Discussion of Probable Questions and Answers (1) |  |
| 4th | Discussion of Probable Questions and Answers(2) |  |
| 18th | 1st | Discussion of Probable Questions and Answers (3) |  |
| 2nd | Discussion of Probable Questions and Answers(4) |  |
| 3rd | Discussion of Probable Questions and Answers (5) |  |
| 4th | Discussion of Probable Questions and Answers (6) |  |