UTKALMANI GOPABANDHU INSTITUTE OF ENGINEERING LESSON PLAN

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| **Discipline:**  **Mechanical** | **Semester: 3RD** | **Name of the Teaching faculty: MONALISHA SWAIN** |
| **Subject: Manufacturing Technology(Th-2)** | **No of Days/ Week class alloted: 4** | **Semester from Date: 14. 02 . 2023 To Date: 25.05.2023**  **No of weeks: 15** |
| Week | Class | Topics |
| 1st | 1st | Introduction |
| 2nd | 1.0 Tool Materials  1.1 Composition of various tool materials |
| 3rd | 1.2 Physical properties& uses of such tool materials. |
| 4th | 1.2 Physical properties& uses of such tool materials. |
| 2nd | 1st | 2. Cutting Tools  2.1 Cutting action of various and tools such as Chisel, hacksaw blade, |
| 2nd | 2.1 Cutting action of various and tools such as dies and reamer |
| 3rd | * 1. 2.3 Turning tool geometry and purpose of tool angle |
| 4th | 2.3 Turning tool geometry and purpose of tool angle |
| 3rd | 1st | 3.0 Lathe Machine  3.1 Construction and working of lathe and CNC lathe Major components of a lathe and their function |
| 2nd | 3.1 Construction and working of lathe and CNC lathe Major components of a lathe and their function |
| 3rd | • Operations carried out in a lathe(Turning, thread cutting, taper turning,• internal machining, parting off, facing, knurling) |
| 4th | Safety measures during machining |
| 4th | 1st | 3.2 Capstan lathe  Difference with respect to engine lathe |
| 2nd | • Major components and their function  • Define multiple tool holders |
| 3rd | 3.3 Turret Lathe  Difference with respect to capstan lathe |
| 4th | • Major components and their function |
| 5th | 1st | • 3.4 Draw the tooling layout for preparation of a hexagonal bolt &bush |
| 2nd | 4.0 Shaper  4.1 Potential application areas of a shaper machine |

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| 3rd | 4.2 Major components and their function |
| 4th | 4.3 Explain the automatic table feed mechanism |
| 6th | 1st | 4.4 Explain the construction &working of tool head  4.6 State the specification of a shaping machine. |
| 2nd | 4.5 Explain the quick return mechanism through sketch |
| 3rd | 5.0 Planning Machine  5.1 Application area of a planer and its difference with respect to shaper |
| 4th | 5.2 Major components and their functions |
| 7th | 1st | 5.3 The table drive mechanism |
| 2nd | 5.4 Working of tool and tool support  5.5 Clamping of work through sketch. |
| 3rd | TEST |
| 4th | 6.0 Milling Machine  6.1 Types of milling machine and operations performed by them and also same for CNC milling machine |
| 8th | 1st | 6.1 Types of milling machine and operations performed by them and also same for CNC milling machine |
| 2nd | 6.2 Explain work holding attachment |
| 3rd | 6.3 Construction & working of simple dividing head |
| 4th | 6.3 Construction & working of simple universal dividing head |
| 9th | 1st | 6.4 Procedure of simple indexing |
| 2nd | * 1. 6.4 Procedure of simple indexing |
| 3rd | 6.4 Procedure of compound indexing |
| 4th | 6.4 Procedure of compound indexing |
| 10th | 1st | 6.5 Illustration of different indexing methods |
| 2nd | 7.0 Slotter  7.1 Major components and their function |
| 3rd | 7.2 Construction and working of slotter machine |
| 4th | 7.3 Tools used in slotter |
| 11th | 1st | 8.0 Grinding  8.1 Significance of grinding operations 8.4 Specification of grinding wheels with example Working of Cylindrical Grinder• Surface Grinder• Centreless Grinder |
| 2nd | 8.2 Manufacturing of grinding wheels |
| 3rd | 8.2 Manufacturing of grinding wheels |
| 4th | 8.3 Criteria for selecting of grinding wheels |
| 12th | 1st | 8.3 Criteria for selecting of grinding wheels |
| 2nd | 8.4 Specification of grinding wheels with example Working of Cylindrical Grinder |

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|  | 3rd | 8.4 Specification of grinding wheels with example Working of Surface Grinder |
| 4th | 8.4 Specification of grinding wheels with example Working of Centreless Grinder |
| 13th | 1st | 9.0 Internal Machining operations  Classification of drilling machines |
| 2nd | 9.1 Working of Bench drilling machine |
| 3rd | • Pillar drilling machine |
| 4th | • Radial drilling machine |
| 14th | 1st | • Different between Boring and drilling) |
| 2nd | • 9.2 Boring  Basic Principle of Boring |
| 3rd | • 9.3 Broaching Types of Broaching(pull type, push type) |
| 4th | • Advantages of Broaching and applications |
| 15th | 1st | 10 Surface finish, lapping  10.1 Definition of Surface finish |
| 2nd | 10.2 Description of lapping& explain their specific cutting. |
| 3rd | Revision |
| 4th | Internal -2 |