

DHABALESWAR INSTITUTE OF POLYTECHNIC

LESSON PLAN-4th SEMESTER (2022)

SUBJECT - MANUFACTURING TECHNOLOGY (TH-2)

Name of the Faculty- SANDEEP MOHAPATRA

| MONTH | CHAPTER /TOPIC | COURSE TO BE COVERED | CLASSES REQUIRED | REMARKS (IF ANY) |
|-------|-------------------|--|------------------|------------------|
| | Chapter-1 | Tool Materials: | 4 | |
| | 1.1 | Composition of various tool materials | 2 | |
| | 1.1 | Physical properties & uses of such tool materials. | 2 | |
| | Chapter -2 | Cutting Tools: | 6 | |
| | 2.1 | Cutting action of various tools such as Chisel, hacksaw blade, dies and reamer | 2 | |
| | 2.2 | Turning tool geometry and purpose of tool angle | 3 | |
| | 2.3 | Machining process parameters (Speed, feed and depth of cut) | 1 | |
| | 2.4 | Coolants and lubricants in machining and purpose | 1 | |
| | Chapter-3 | Lathe Machine: | 8 | |
| | 3.1 | Construction and working of lathe and CNC lathe <ul style="list-style-type: none"> Major components of a lathe and their function Operations carried out in a lathe (Turning, thread cutting, taper turning, internal machining, parting off, facing, knurling) Safety measures during machining | 2 | |
| | 3.2 | Capstan lathe <ul style="list-style-type: none"> Difference with respect to engine lathe Major components and their function Define multiple tool holders | 2 | |
| | 3.3 | Turret Lathe <ul style="list-style-type: none"> Difference with respect to capstan lathe Major components and their function | 2 | |
| | 3.4 | Draw the tooling layout for preparation of a hexagonal bolt & bush | 2 | |
| | Chapter-4 | Shaper: | 6 | |
| | 4.1 | Potential application areas of a shaper machine | 1 | |
| | 4.2 | Major components and their function | 1 | |
| | 4.3 | Explain the automatic feed mechanism | 1 | |
| | 4.4 | Explain the construction & working of tool head | 1 | |
| | 4.5 | Explain the quick return mechanism through sketch | 1 | |
| | 4.6 | State the specification of a shaping machine. | 1 | |

| | | | |
|------------------|---|-----------|--|
| Chapter-5 | Planing Machine: | 6 | |
| 5.1 | Application area of a planer and its difference with respect to shaper | 1 | |
| 5.2 | Major components and their functions | 1 | |
| 5.3 | The table drive mechanism | 2 | |
| 5.4 | Working of tool and tool support | 1 | |
| 5.5 | Clamping of work through sketch. | 1 | |
| Chapter-6 | Milling Machine: | 08 | |
| 6.1 | Types of milling machine and operations performed by them and also same for CNC milling machine | 1 | |
| 6.2 | Explain work holding attachment | 1 | |
| 6.3 | Construction & working of simple dividing head, universal dividing head | 2 | |
| 6.4 | Procedure of simple and compound indexing | 2 | |
| 6.5 | Illustration of different indexing methods | 2 | |
| Chapter-7 | Slotter | 6 | |
| 7.1 | Major components and their function | 2 | |
| 7.2 | Construction and working of slotter machine | 2 | |
| 7.3 | Tools used in slotter | 2 | |
| Chapter-8 | Grinding | 6 | |
| 8.1 | Significance of grinding operations | 1 | |
| 8.2 | Manufacturing of grinding wheels | 2 | |
| 8.3 | Criteria for selecting of grinding wheels | 1 | |
| 8.4 | Specification of grinding wheels with example Working of <ul style="list-style-type: none"> • Cylindrical Grinder • Surface Grinder • Centreless Grinder | 2 | |
| Chapter-9 | Internal Machining operations | 6 | |
| | Classification of drilling machines | | |
| 9.1 | Working of <ul style="list-style-type: none"> • Bench drilling machine • Pillar drilling machine • Radial drilling machine | 2 | |

| | | | | |
|--|-------------------|---|----------|--|
| | 9.2 | Boring <ul style="list-style-type: none"> • Basic Principle of Boring • Different between Boring and drilling | 2 | |
| | 9.3 | Broaching <ul style="list-style-type: none"> • Types of Broaching(pull type, push type) • Advantages of Broaching and applications | 2 | |
| | Chapter-10 | Surface finish, lapping | 4 | |
| | 10.1 | Definition of Surface finish | 2 | |
| | 10.2 | Description of lapping& explain their specific cutting. | 2 | |
| | | | | |

SANDEP MOHAPATRA
LECT. MECHANICAL ENGINEERING