

BHUBANANANDA ODISHA SCHOOL OF ENGINEERING, CUTTACK  
DEPARTMENT OF MECHANICAL ENGINEERING



LESSON PLAN

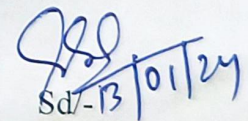
SUBJECT: Manufacturing Technology

FACULTY: MR. S.P.B.B BHATTA

ACCADEMIC SESSION: 2023-24

SEMESTER: 4<sup>th</sup>

SEC: B

  
Sd/-13/10/24

HOD (Mech Engg.)

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**LESSON PLAN**

|                                                     |                                                                                                                          |                               |                                                                                                                |
|-----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|-------------------------------|----------------------------------------------------------------------------------------------------------------|
| <b>Discipline:</b><br><b>Mechanical Engineering</b> | <b>Semester: 4<sup>rd</sup>B</b>                                                                                         |                               | <b>Name of the teaching faculty:</b><br><b>S.P.B.B Bhatta</b>                                                  |
| <b>Subject:</b><br><b>Manufacturing Technology</b>  | <b>No. of Days/ per week class allotted:</b><br><b>04 periods per week</b><br><b>(Mon-1, Tue-1, Wed-1, Thu-1 period)</b> |                               | <b>Semester From Date: 16-01-2024 To Date: 26-04-2024</b><br><b>No. of weeks: 15 weeks</b>                     |
| <b>Week</b>                                         | <b>Class Day</b>                                                                                                         | <b>No of period available</b> | <b>Theory Topics</b>                                                                                           |
| <b>1<sup>ST</sup></b>                               | 16/01/2024                                                                                                               | 1                             | Briefing about the syllabus.<br>Chapter1: Introduction Tool Materials<br>Composition of various tool materials |
|                                                     | 17/01/2024                                                                                                               | 1                             | Physical properties                                                                                            |
|                                                     | 18/01/2024                                                                                                               | 1                             | uses of such tool materials.                                                                                   |
| <b>2<sup>ND</sup></b>                               | 24/01/2024                                                                                                               | 1                             | uses of such tool materials.                                                                                   |
|                                                     | 25/01/2024                                                                                                               | 1                             | Cutting Tools 2.1 Cutting action of various and tools such as Chisel, hacksaw blade, dies and reamer           |
| <b>3<sup>RD</sup></b>                               | 29/01/2024                                                                                                               | 1                             | 2.2 Turning tool geometry and purpose of tool angle                                                            |
|                                                     | 30/01/2024                                                                                                               | 1                             | 2.2 Turning tool geometry and purpose of tool angle                                                            |
|                                                     | 31/01/2024                                                                                                               | 1                             | 2.3 Machining process parameter(speed, feed, depth of cut)                                                     |
|                                                     | 01/02/2024                                                                                                               | 1                             | 2.3 Machining process parameter(speed, feed, depth of cut)                                                     |

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|-----------------|------------|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                 |            |   |                                                                                                                                                                                                                |
| 4 <sup>TH</sup> | 05/02/2024 | 1 | 2.4 Coolants and lubricants in machining process                                                                                                                                                               |
|                 | 06/02/2024 | 1 | Lathe Machine 3.1 Construction and working of lathe and CNC lathe                                                                                                                                              |
|                 | 07/02/2024 | 1 | 3.1.1 operation carried out in lathe machine<br>Machining parameter.                                                                                                                                           |
|                 | 08/02/2024 | 1 | 3.1.2 safety measures during machining                                                                                                                                                                         |
| 5 <sup>TH</sup> | 12/02/2024 | 1 | 3.2 Major components of<br>Capstan lathe<br>3.2 Difference with respect to engine lathe.                                                                                                                       |
|                 | 13/02/2024 | 1 | 3.3 Turret Lathe<br>Difference with respect to capstan lathe                                                                                                                                                   |
|                 | 15/02/2024 | 1 | 3.3 Turret Lathe<br>Difference with respect to capstan lathe<br>3.4 Draw the tooling layout for preparation of a hexagon bolt & bush<br>4. Shaper machine<br>4.1 Potential application areas of shaper machine |
| 6 <sup>TH</sup> | 19/02/2024 | 1 | 3.4 Draw the tooling layout for preparation of a hexagon bolt & bush                                                                                                                                           |
|                 | 20/02/2024 | 1 | 3.4 Draw the tooling layout for preparation of a hexagon bolt & bush                                                                                                                                           |

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|                  | 21/02/2024 | 1 | Shaper 4.1 Potential application areas of a shaper machine                                                          |
|                  | 22/02/2024 | 1 | 4.2 Major components and their function                                                                             |
| 7 <sup>TH</sup>  | 26/02/2024 | 1 | 4.3 Explain the automatic able feed mechanism                                                                       |
|                  | 27/02/2024 | 1 | 4.4 Explain the construction & working of tool head                                                                 |
|                  |            |   |                                                                                                                     |
|                  | 28/02/2024 | 1 | 4.5 Explain the quick return mechanism through sketch                                                               |
|                  | 29/02/2024 | 1 | 4.6 State the specification of a shaping machine..                                                                  |
|                  | 04/03/2024 | 1 | Planning Machine 5.1 Application area of a planer and its difference with respect to shaper                         |
| 8 <sup>TH</sup>  | 06/03/2024 | 1 | 5.2 Major components and their functions                                                                            |
|                  | 07/03/2024 | 1 | 5.3 The table drive mechanism                                                                                       |
| 9 <sup>TH</sup>  | 11/03/2024 | 1 | 5.4 Working of tool and tool support                                                                                |
|                  | 12/03/2024 | 1 | 5.5 Clamping of work through sketch                                                                                 |
|                  | 13/03/2024 | 1 | 5.5 Clamping of work through sketch                                                                                 |
|                  | 14/03/2024 | 1 | Milling Machine 6.1 Types of milling machine and operations performed by them and also same for CNC milling machine |
| 10 <sup>TH</sup> | 18/03/2024 | 1 | 6.2 Explain work holding attachment                                                                                 |
|                  | 19/03/2024 | 1 | 6.3 Construction & working of simple dividing head, universal dividing head                                         |
|                  | 20/03/2024 | 1 | 6.4 Procedure of simple and compound indexing                                                                       |

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|                  | 21/03/2024 | 1 | 6.5 Illustration of different indexing methods<br>Class test II                                                                                                   |
| 11 <sup>TH</sup> | 27/03/2024 | 1 | 7.0 Slotter 7.1 Major components and their function                                                                                                               |
|                  | 28/03/2024 | 1 | 7.2 Construction and working of slotter machine                                                                                                                   |
|                  |            |   | 7.3 Tools used in slotter                                                                                                                                         |
|                  | 02/04/2024 | 1 | 8.0 Grinding 8.1 Significance of grinding operations                                                                                                              |
| 12 <sup>th</sup> | 03/04/2024 | 1 | 8.2 Manufacturing of grinding wheels                                                                                                                              |
|                  | 04/04/2024 | 1 | 8.3 Criteria for selecting of grinding wheels                                                                                                                     |
| 13 <sup>th</sup> | 08/04/2024 | 1 | 8.4 Specification of grinding wheels with example Working of • Cylindrical Grinder • Surface Grinder • Centreless Grinder                                         |
|                  | 09/04/2024 | 1 | 9.0 Internal Machining operations Classification of drilling machines 9.1 Working of • Bench drilling machine • Pillar drilling machine • Radial drilling machine |
|                  | 10/04/2024 | 1 | 9.2 Boring • Basic Principle of Boring • Different between Boring and drilling                                                                                    |
|                  | 15/04/2024 | 1 | 9.3 Broaching • Types of Broaching(pull type, push type) • Advantages of Broaching and applications                                                               |

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|------------------|------------|---|--------------------------------------------------------------|
| 14 <sup>th</sup> | 16/04/2024 | 1 | 10 Surface finish, lapping 10.1 Definition of Surface finish |
|                  | 18/04/2024 | 1 | 10.2 Description of lapping& explain their specific cutting  |
| 15 <sup>th</sup> | 22/04/2024 | 1 | Revision                                                     |
|                  | 23/04/2024 | 1 | Revision                                                     |
|                  | 24/04/2024 | 1 | Previous year question discussion                            |
|                  | 25/04/2024 | 1 | Previous year question discussion                            |