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| <b>Discipline:</b><br><b><u>MECHANICAL</u></b>           | <b>Semester:</b><br><b><u>3rd</u></b>                           | <b>Name of the Teaching Faculty:</b><br><b><u>ER. BIKASH MURMU</u></b><br><b><u>Sr. Lecturer Mechanical</u></b>                       |
| <b>Subject:</b> TH-1<br><b>PRODUCTION<br/>TECHNOLOGY</b> | <b>No. of days/per<br/>week class<br/>allotted:</b><br><b>4</b> | <b>Semester From date:</b> 15/9/22 <b>To</b><br><b>date:</b><br><b>No of weeks: 15</b>  |
| <b>Week</b>  | <b>Class Day</b>  | <b>Theory Topics:</b>   |
| <b>1<sup>st</sup></b>                                    | <b>1<sup>st</sup></b>   | <b>Metal Forming Processes:</b><br>Extrusion: Definition & Classification   |
|  | <b>2<sup>nd</sup></b>   | Explain direct, indirect and impact extrusion process.  |
|  | <b>3<sup>rd</sup></b>   | Explain direct, indirect and impact extrusion process.  |
|  | <b>4<sup>th</sup></b>   | Define rolling. Classify it.  |
| <b>2<sup>nd</sup></b>                                    | <b>1<sup>st</sup></b>   | Differentiate between cold rolling and hot rolling process.   |
|  | <b>2<sup>nd</sup></b>   | List the different types of rolling mills used in Rolling process.  |
|  | <b>3<sup>rd</sup></b>   | <b>Welding</b><br>Define welding and classify various welding processes.  |
|  | <b>4<sup>th</sup></b>   | Explain fluxes used in welding.   |
| <b>3<sup>rd</sup></b>                                    | <b>1<sup>st</sup></b>   | Explain Oxy-acetylene welding process.  |
|  | <b>2<sup>nd</sup></b>   | Explain various types of flames used in Oxy-acetylene welding process.  |
|  | <b>3<sup>rd</sup></b>   | Explain Arc welding process.  |
|  | <b>4<sup>th</sup></b>   | Specify arc welding electrodes.   |
| <b>4<sup>th</sup></b>                                    | <b>1<sup>st</sup></b>   | Define resistance welding and classify it.  |
|  | <b>2<sup>nd</sup></b>   | Describe various resistance welding processes such as butt welding, spot welding, flash welding, projection welding and seam welding. |
|  | <b>3<sup>rd</sup></b>   | Describe various resistance welding processes such as butt welding, spot welding, flash welding, projection welding and seam welding. |
|  | <b>4<sup>th</sup></b>   | Describe various resistance welding processes such as butt welding, spot welding, flash welding, projection welding and seam welding. |
| <b>5<sup>th</sup></b>                                    | <b>1<sup>st</sup></b>   | Explain TIG and MIG welding process   |
|  | <b>2<sup>nd</sup></b>   | Explain TIG and MIG welding process   |
|  | <b>3<sup>rd</sup></b>   | State different welding defects with causes and remedies.   |
|  | <b>4<sup>th</sup></b>   | State different welding defects with causes and remedies.   |

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| 6th  | 1st | Casting<br>Define casting and classify the various casting processes.   |
|      | 2nd | Explain the procedure of Sand mould casting.  |
|      | 3rd | Explain the procedure of Shell mould casting.   |
|      | 4th | Explain different types of molding sands with their composition and properties.   |
| 7th  | 1st | Explain different types of molding sands with their composition and properties.   |
|      | 2nd | Classify different pattern and state various pattern allowances.  |
|      | 3rd | Classify core   |
|      | 4th | Describe construction and working of cupola and crucible furnace.   |
| 8th  | 1st | Describe construction and working of cupola and crucible furnace.   |
|      | 2nd | Explain die casting method  |
|      | 3rd | Explain centrifugal casting such as true centrifugal casting, centrifuging with advantages, limitation and area of application. |
|      | 4th | Explain centrifugal casting such as true centrifugal casting, centrifuging with advantages, limitation and area of application. |
| 9th  | 1st | Explain various casting defects with their causes and remedies.   |
|      | 2nd | Explain various casting defects with their causes and remedies.   |
|      | 3rd | <b>Powder Metallurgy</b><br>Define powder metallurgy process.   |
|      | 4th | State advantages of powder metallurgy technology technique  |
| 10th | 1st | Describe the methods of producing components by powder metallurgy technique   |
|      | 2nd | Describe the methods of producing components by powder metallurgy technique   |
|      | 3rd | Explain sintering   |
|      | 4th | Economics of powder metallurgy.   |

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| 11th | 1st | <b>Press Work</b><br>Describe Press Work: blanking, piercing and trimming.               |
|      | 2nd | Describe Press Work: blanking, piercing and trimming.                                    |
|      | 3rd | List various types of die and punch  |
|      | 4th | Explain simple, Compound & Progressive dies  |
| 12th | 1st | Explain simple, Compound & Progressive dies  |
|      | 2nd | Explain simple, Compound & Progressive dies  |
|      | 3rd | Describe the various advantages & disadvantages of above dies                            |
|      | 4th | <b>Jigs and fixtures</b><br>Define jigs and fixtures                                     |
| 13th | 1st | State advantages of using jigs and fixtures  |
|      | 2nd | State advantages of using jigs and fixtures  |
|      | 3rd | State the principle of locations   |
|      | 4th | State the principle of locations   |
| 14th | 1st | State the principle of locations   |
|      | 2nd | State the principle of locations   |
|      | 3rd | Describe the methods of location with respect to 3-2-1 point location of rectangular jig |
|      | 4th | Describe the methods of location with respect to 3-2-1 point location of rectangular jig |
| 15th | 1st | Describe the methods of location with respect to 3-2-1 point location of rectangular jig |
|      | 2nd | Describe the methods of location with respect to 3-2-1 point location of rectangular jig |
|      | 3rd | List various types of jig and fixtures.  |
|      | 4th | List various types of jig and fixtures.  |

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