

**GOVT.POLYTECHNIC NAYAGARH****3<sup>rd</sup> SEMESTER MECHANICAL ENGINEERING (2023-24)****SUBJECT-PRODUCTION TECHNOLOGY**

NAME OF FACULTY: Mrs. Monalisa Sahoo, W/S Suptd. &amp; HOD

TOTAL PERIODS-60

THEORY-4P/WEEK

Semester from :01/08/2023 to 30/11/2023

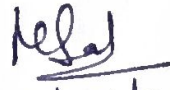
| Sl No. | week            | Day                 | Topics to be covered  |
|--------|-----------------|---------------------|---|
| 1      | 1 <sup>st</sup> | 1 <sup>st</sup> day | Introduction to Metal Forming Processes                           |
|        |                 | 2 <sup>nd</sup> day | Extrusion: Definition & Classification                            |
|        |                 | 3 <sup>rd</sup> day | Direct and Indirect Extrusion process                             |
|        |                 | 4 <sup>th</sup> day | Explain Impact extrusion process                                  |
| Sl No. | week            | Day                 | Topics to be covered  |
| 2      | 2 <sup>nd</sup> | 1 <sup>st</sup> day | Define Rolling and Classification                                 |
|        |                 | 2 <sup>nd</sup> day | Differentiate between cold rolling and hot rolling process        |
|        |                 | 3 <sup>rd</sup> day | List the different types of rolling mills used in Rolling process |
|        |                 | 4 <sup>th</sup> day | Doubt clearance and Revision                                      |
| Sl No. | week            | Day                 | Topics to be covered  |
| 3      | 3 <sup>rd</sup> | 1 <sup>st</sup> day | Introduction to Welding   |
|        |                 | 2 <sup>nd</sup> day | Define Welding and classify various welding processes             |
|        |                 | 3 <sup>rd</sup> day | Fluxes used in welding.   |
|        |                 | 4 <sup>th</sup> day | Oxy-acetylene welding process                                     |
| Sl No. | week            | Day                 | Topics to be covered  |
| 4      | 4 <sup>th</sup> | 1 <sup>st</sup> day | Types of flames used in Oxy-acetylene welding process             |
|        |                 | 2 <sup>nd</sup> day | Arc welding process   |
|        |                 | 3 <sup>rd</sup> day | Difference between DC and AC Arc welding process                  |
|        |                 | 4 <sup>th</sup> day | Specification of Arc welding electrodes                           |
| Sl No. | week            | Day                 | Topics to be covered  |
| 5      | 5 <sup>th</sup> | 1 <sup>st</sup> day | Define Resistance welding and Classification                      |
|        |                 | 2 <sup>nd</sup> day | Butt welding and Spot welding Process                             |
|        |                 | 3 <sup>rd</sup> day | Flash welding and Projection welding Process                      |
|        |                 | 4 <sup>th</sup> day | Seam welding with advantages and applications                     |
| Sl No. | week            | Day                 | Topics to be covered  |
| 6      | 6 <sup>th</sup> | 1 <sup>st</sup> day | TIG Welding process with advantages and applications              |



|               |                  |                     |  |
|---------------|------------------|---------------------|--|
|               |                  | 2 <sup>nd</sup> day | MIG Welding process with advantages and applications                           |
|               |                  | 3 <sup>rd</sup> day | State different Welding defects with causes                                    |
|               |                  | 4 <sup>th</sup> day | Remedies of welding defects  |
| <b>Sl No.</b> | <b>week</b>      | <b>Day</b>          | <b>Topics to be covered</b>  |
| 7             | 7 <sup>th</sup>  | 1 <sup>st</sup> day | Define Casting and Classify the various Casting processes.                     |
|               |                  | 2 <sup>nd</sup> day | Explain the procedure of Sand mould casting                                    |
|               |                  | 3 <sup>rd</sup> day | Difference between Green sand and Dry sand mould casting                       |
|               |                  | 4 <sup>th</sup> day | Explain different types of molding sands with their composition and properties |
| <b>Sl No.</b> | <b>week</b>      | <b>Day</b>          | <b>Topics to be covered</b>  |
| 8             | 8 <sup>th</sup>  | 1 <sup>st</sup> day | Classify different pattern and State various pattern allowances                |
|               |                  | 2 <sup>nd</sup> day | Classification of Cores  |
|               |                  | 3 <sup>rd</sup> day | Describe construction and working of cupola furnace                            |
|               |                  | 4 <sup>th</sup> day | Describe construction and working of crucible furnace                          |
| <b>Sl No.</b> | <b>week</b>      | <b>Day</b>          | <b>Topics to be covered</b>  |
| 9             | 9 <sup>th</sup>  | 1 <sup>st</sup> day | Die casting method with advantages, application and limitations                |
|               |                  | 2 <sup>nd</sup> day | True centrifugal casting with advantages, limitation and area of application   |
|               |                  | 3 <sup>rd</sup> day | Centrifugal casting with advantages, limitation and area of application        |
|               |                  | 4 <sup>th</sup> day | Various casting defects with their causes and remedies                         |
| <b>Sl No.</b> | <b>week</b>      | <b>Day</b>          | <b>Topics to be covered</b>  |
| 10            | 10 <sup>th</sup> | 1 <sup>st</sup> day | Define powder metallurgy process   |
|               |                  | 2 <sup>nd</sup> day | State advantages of powder metallurgy technology technique                     |
|               |                  | 3 <sup>rd</sup> day | Describe the methods of producing components by powder metallurgy technique    |
|               |                  | 4 <sup>th</sup> day | Sintering process of powder metallurgy   |
| <b>Sl No.</b> | <b>week</b>      | <b>Day</b>          | <b>Topics to be covered</b>  |
| 11            | 11 <sup>th</sup> | 1 <sup>st</sup> day | Economics of powder metallurgy   |
|               |                  | 2 <sup>nd</sup> day | Introduction to Press Work   |



|               |                  |                     |  |
|---------------|------------------|---------------------|--|
|               |                  | 3 <sup>rd</sup> day | Blanking and Piercing operation of Press work  |
|               |                  | 4 <sup>th</sup> day | Trimming operation of Press work   |
| <b>Sl No.</b> | <b>week</b>      | <b>Day</b>          | <b>Topics to be covered</b>  |
| 12            | 12 <sup>th</sup> | 1 <sup>st</sup> day | List various types of dies and punch   |
|               |                  | 2 <sup>nd</sup> day | Explain Simple and Compound Dies   |
|               |                  | 3 <sup>rd</sup> day | Various advantages and disadvantages of above dies                                       |
|               |                  | 4 <sup>th</sup> day | Define jigs and fixtures   |
| <b>Sl No.</b> | <b>week</b>      | <b>Day</b>          | <b>Topics to be covered</b>  |
| 13            | 13 <sup>th</sup> | 1 <sup>st</sup> day | State advantages of using jigs and fixtures  |
|               |                  | 2 <sup>nd</sup> day | State the principle of locations   |
|               |                  | 3 <sup>rd</sup> day | Describe the methods of location with respect to 3-2-1 point location of rectangular jig |
|               |                  | 4 <sup>th</sup> day | Describe the methods of location with respect to 3-2-1 point location of rectangular jig |
| <b>Sl No.</b> | <b>week</b>      | <b>Day</b>          | <b>Topics to be covered</b>  |
| 14            | 14 <sup>th</sup> | 1 <sup>st</sup> day | List various types of Fixtures   |
|               |                  | 2 <sup>nd</sup> day | List various types of Jigs   |
|               |                  | 3 <sup>rd</sup> day | Limitation of Jigs and Fixtures  |
|               |                  | 4 <sup>th</sup> day | Progressive and Compound Dies  |
| <b>Sl No.</b> | <b>week</b>      | <b>Day</b>          | <b>Topics to be covered</b>  |
| 15            | 15 <sup>th</sup> | 1 <sup>st</sup> day | Doubt clearance and Revision   |
|               |                  | 2 <sup>nd</sup> day | Doubt clearance and Revision   |
|               |                  | 3 <sup>rd</sup> day | Doubt clearance and Revision   |
|               |                  | 4 <sup>th</sup> day | Doubt clearance and Revision   |

  
 31/07/2023  
 W/S Suptd & HOD Mech.