| Discipline : ELECTRICAL ENGG. | Semester :3rd | Name of the Teaching Faculty: **BHABANI SANKAR SAHOO** |
|---|---|---|
| **Subject:ELEMENTS OF MECHANICAL ENGINEERING (TH-3)** | No. of days/per week class allotted:**04** | Semester From Date: **01.07.2023** To Date : **08.11.2024**<br>No. of Weeks:**15** |
| Week | Class Day | Theory Topics |
| 1ST | 1ST | 1. **THERMODYNAICS:**<br>1.1 State Unit of Heat and work |
| | 2ND | 1st law of thermodynamics. |
| | 3RD | 1st law of thermodynamics. |
| | 4TH | 1.2 State Laws of perfect gases |
| 2ND | 1ST | 1.2 State Laws of perfect gases |
| | 2ND | 1.3 Determine relationship of specific heat of gases at constant volume and constant pressure. |
| | 3RD | **2. PROPERTIES OF STEAM** |
| | 4TH | PROPERTIES OF STEAM |
| 3RD | 1ST | Explain total heat of wet, dry and super heated steam |
| | 2ND | Explain total heat of wet, dry and super heated steam |
| | 3RD | Use steam table for solution of simple problem |
| | 4TH | 3. **BOILERS**:<br>3 . 1 State types of Boilers |
| 4TH | 1ST | 3 . 1 State types of Boilers |
| | 2ND | Describe Cochran boiler |
| | 3RD | Describe Cochran boiler |
| | 4TH | Describe Babcock Wilcox boiler |
| 5TH | 1ST | Describe Babcock Wilcox boiler |
| | 2ND | Describe Mountings and accessories |
| | 3RD | Describe Mountings and accessories |
| | 4TH | Describe Mountings and accessories |
| 6TH | 1ST | CLASS TEST |
| | 2ND | 4. **STEAM ENGINES** |
| | 3RD | Explain the principle of Simple steam engine |
| | 4TH | Explain the principle of Simple steam engine |
| 7TH | 1ST | Draw Indicator diagram |
| | 2ND | Calculate Mean effective pressure |
| | 3RD | IHP ,BHP and mechanical efficiency. |
| | 4TH | IHP ,BHP and mechanical efficiency. |
| 8TH | 1ST | Solve Simple problem. |
| | 2ND | Solve Simple problem. |
| | 3RD | Solve Simple problem. |
| | 4TH | 5. **STEAM TURBINES** |
| 9TH | 1ST | 5.1 State Types of steam turbine |
| | 2ND | 5.1 State Types |
| | 3RD | 5.1 State Types |
| | 4TH | 5.2 Differentiate between impulse and reaction Turbine |


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| 10TH | 1ST | CLASS TEST |
| | 2ND | 6. **CONDENSER:** |
| | 3RD | 6.1 Explain the function of condenser |
| | 4TH | 6.2 State their types |
| 11TH | 1ST | 6.2 State their types |
| | 2ND | 7. **I.C. ENGINE:**<br>7.1 Explain working of 2 stroke petrol and Diesel engines. |
| | 3RD | 7.1 Explain working of 4 stroke petrol and Diesel engines. |
| | 4TH | 7.2 Differentiate between them. |
| 12TH | 1ST | 7.2 Differentiate between them |
| | 2ND | **8. HYDROSTATICS**:<br>8.1 Describe properties of fluid |
| | 3RD | 8.1 Describe properties of fluid |
| | 4TH | 8.2 Determine pressure at a point, pressure measuring Instruments |
| 13TH | 1ST | 8.2 Determine pressure at a point, pressure measuring Instruments |
| | 2ND | 8.2 Determine pressure at a point, pressure measuring Instruments |
| | 3RD | 9. **HYDROKINETICS:**<br>9.1 Deduce equation of continuity of flow |
| | 4TH | 9.2 Explain energy of flowing liquid |
| 14TH | 1ST | 9.2 Explain energy of flowing liquid |
| | 2ND | 9.3 State and explain Bernoulli's theorem |
| | 3RD | CLASS TEST |
| | 4TH | **10. HYDRAULIC DEVICES AND PNEUMATICS:** |
| 15TH | 1ST | 10.1 Intensifier |
| | 2ND | 10.2 Hydraulic lift |
| | 3RD | 10.3 Accumulator |
| | 4TH | 10.4 Hydraulic ram |

**Learning Resouces:**


01. Thermal Engineering, by R.S. Khurmi , S.Chand
02. Thermal Engineering by A.R.Basu, Dhanpat Rai
03. Thermal Engineering, by A.S.Sarao, Satya Prakash
04. Hydraulics & Hydraulic M/Cs by A. R. Basu , Dhanpat Rai & Co.
05. Hydraulics & Hydraulic M/Cs by R. K. Bansal , Laxmi Publishers


MECHANICAL ENGG. DEPARTMENT GIET POLY

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