# GOVT.POLYTECHNICMAYURBHANJ

## LESSON PLAN

**DISCIPLINE:- MECHANICAL ENGINEERING**

**Name of theTeachingFaculty: THAKURA HANSDAH**

**SEMESTER: 5TH**

| Subject: DME | | No.of Days/Perweek classallotted:04 | CHAPTER | SemesterFromdate:15.09.2022 ToDate:21.1.2023 |
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| **MONTH** | **Week** | **DAY** | | **TOPIC TO BE COVERED** |
| SEPTEMBER | | 4TH | CHAPTER -1 | **1.Introduction:** Introduction to Machine Design |
| | | 5TH | | Classification of Machine Design |
| | 4TH | 1ST | | Different mechanical engineering materials used in design with their uses and their mechanical and physical properties |
| | | 3RD | | Different mechanical engineering materials used in design with their uses and their mechanical and physical properties |
| | | 4TH | | Define working stress, yield stress, ultimate stress & factor of safety and stress –strain curve for M.S & C.I. |
| | | 5TH | | Define working stress, yield stress, ultimate stress & factor of safety and stress –strain curve for M.S & C.I. |
| | 5TH | 1ST | | Modes of Failure (By elastic deflection, general yielding & fracture) |
| | | 3RD | | Modes of Failure (By elastic deflection, general yielding & fracture) |
| | | 4TH | | State the factors governing the design of machine elements |
| | | 5TH | | Describe design procedure |
| OCTOBER | 1ST | 1ST | | QuestionDiscussion. |
| | | | | |
| | 3RD | 1ST | | Solve of simple problem. |
| | | 3RD | | Solve of simple problem. |
| | | 4TH | | Solve of simple problem. |
| | | 5TH | | Solve of simple problem. |
| | 4TH | 1ST | | **2.0 Design of fastening elements: Joints and their classification .** |
| | | 3RD | | State types of welded joints |
| | | 4TH | | Design of welded joints for single transverse fillet welded joint |
| | | 5TH | | **CLASS TEST-1** |
| | | | | Design of welded joints for double parallel fillet welded joint |

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|---|---|---|---|---|
| | 5TH | 1ST | | Design of welded joints for sinle transverse double parallel fillet welded joint |
| | | 3RD | | Design the welded joint with eccentric loading. |
| | | 4TH | CHAPTE-2 | State advantages of welded joints over other joints. |
| | | 5TH | | Solve of simple problem |
| NOVEMBER | 1ST | 1st | | |
| | | 3RD | | State types of riveted joints. |
| | | 4TH | | Joints and their classification. |
| | | 5TH | | Determine strength & efficiency of riveted joint |
| | 2ND | 1ST | | Dermine strength & efficiency of riveted joint |
| | | 3RD | | State advantages of riveted joints over other joints. |
| | | 4TH | | Question Discussion |
| | | 5TH | | Solve of simple problem. |
| | 3RD | 1ST | | **3.0 Design of shafts and Keys:** |
| | | 3RD | | State function of shafts &State materials for shafts. |
| | | 4TH | | Design solid shafts to transmit a given power at given rpm based on a) Strength: (i) Shear stress, (ii) Combined bending tension; b) Rigidity: (i) Angle of twist, (ii) Deflection, (iii) Modulus of rigidity |
| | | 5TH | | Design solid shafts to transmit a given power at given rpm based on a) Strength: (i) Shear stress, (ii) Combined bending tension; b) Rigidity: (i) Angle of twist, (ii) Deflection, (iii) Modulus of rigidity |
| | 4TH | 1ST | | Design hollow shafts to transmit a given power at given rpm based on a) Strength: (i) Shear stress, (ii) Combined bending tension; b) Rigidity(i) Angle of twist, (ii) Deflection, (iii) Modulus of rigidity |
| | | 3RD | | Design hollow shafts to transmit a given power at given rpm based on a) Strength: (i) Shear stress, (ii) Combined bending tension; b) Rigidity: (i) Angle of twist, (ii) Deflection, (iii) Modulus of rigidity |
| | | 4TH | CHAPTER-3 | Solve numerical problem on shaft |
| | | 5TH | | Solve numerical problem on shaft |
| | 5TH | 1ST | | State standard size of shaft as per I.S |
| | | 3RD | | State function of keys, types of keys & material of keys |
| | | 4TH | | |
| | | 5TH | | |
| | 1ST | 1ST | | Describe failure of key, effect of key way. |
| | | 3RD | | Describe failure of parallel sunkkey, effect of key way. |
| | | 4TH | | Describe failure of square key, effect of key way |
| | | 5TH | | Describe failure of rectangular sunk key, effect of key way. |

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| | 2ND | 1ST | | Design rectangular sunk key considering its failure against shear & crushing. |
| | | 3RD | | Design rectangular sunk key by using empirical relation for given diameter of shaft |
| | | 4TH | | Solve numerical on Design of keys. |
| | | 5TH | | Solve numerical on Design of keys. |
| DECEMBER | 3RD | 1ST | CHAPER-4 | **4.0 Design of Coupling:** **Design of Shaft Coupling** |
| | | 3RD | | Requirements of a good shaft coupling |
| | | 4TH | | Types of Coupling. |
| | | 5TH | | Design of Sleeve or Muff-Coupling. |
| | 4TH | 1ST | | Design of Clamp or Compression Coupling. |
| | | 3RD | | Solve numerical on Design of Coupling. |
| | | 4TH | | **INTERNAL EXAMINATION** |
| | | 5TH | | Solve numerical on Design of Coupling. |
| | 5TH | 1ST | CHAPTER-5 | **5.0 Design a closed coil helical spring:** Materials used for helical spring |
| | | 3RD | | Standard size spring wire. (SWG) |
| | | 4TH | | Terms used in compression spring |
| | | 5TH | | &Terms used in compression spring |
| JANUARY | 1ST | 1ST | | Stress in helical spring of a circular wire. |
| | | 3RD | | Deflection of helical spring of circular wire |
| | | 4TH | | Surge in spring |
| | | 5TH | | Solve numerical on design of closed coil helical compression spring |
| | 2ND | 1ST | | Solve numerical on design of closed coil helical compression spring |
| | | 3RD | | CLASS TEST-2 |
| | | 4TH | | QUESTION DISCUSSION |
| | | 5TH | | QUESTION DISCUSSION |
| | 3RD | 1ST | | REVISION |
| | | 3RD | | REVISION |
| | | 4TH | | REVISION |
| | | 5TH | | REVISION |

HOD
Mechanical Engineering

SUBJECT
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