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| Dicipline: | Mech. | Semester: | 5th | Name of the Teaching Faculty: | Ajitav Sahoo |
| Subject: | D.M.E | No of Days/Week Class Allotted: | 4 | Semester From date: | 15/09/22 To date 21/01/25 |
| | | | | | No.of Weeks: |

| WEEK | Class Day | Theory Topics |
|------|-----------|---|
| 1 | 1st | Introduction to machine design and classify it |
| | 2nd | Different types of mechanical engineering materials used in design |
| | 3rd | Mechanical & physical properties of engg. material. |
| | 4th | Define working stress, yield stress, ultimate stress & factor of safety |
| | 5th | |
| 2 | 1st | Stress-strain curve for M.S & C-I |
| | 2nd | Modes of failure |
| | 3rd | State the factors governing the design of machine elements |
| | 4th | Describe design procedure. |
| | 5th | |
| 3 | 1st | Joints & their classification. |
| | 2nd | State types of welded joints. |
| | 3rd | State advantage of welded joint over other joints |
| | 4th | Design of welded joints for eccentric loads. |
| | 5th | |

Theory Topics

| WEEK | Class Day | Theory Topics |
|------|-----------|--|
| 4 | 1st | State types of riveted joints |
| | 2nd | State types of rivets. |
| | 3rd | Describe the failure of riveted joints. |
| | 4th | Determine strength & efficiency of riveted joints. |
| | 5th | |
| 5 | 1st | Design riveted joint for pressure vessel. |
| | 2nd | Solve numericals on welded joint & riveted joints. |
| | 3rd | State function of shafts. |
| | 4th | State the material of shafts. |
| | 5th | |
| 6 | 1st | Design of solid & hollow shafts |
| | 2nd | State standard size of shafts |
| | 3rd | State the function of keys |
| | 4th | State types of keys. |
| | 5th | |

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| Discipline: Mechanical | Semester: 5th | Name of the Teaching Faculty: Ajitav Sahoo | |
| Subject: EMT D.M.E | No of Days/Week Class Allotted: 1 | Semester From date: 15/09/22 To date: 21/01/23 | No. of Weeks: |

| WEEK | Class Day | Theory Topics |
|------|-----------|--|
| 1 | 1st | State the materials of keys |
| | 2nd | Describe the failure of keys |
| | 3rd | State effect of key ways. |
| | 4th | Solve simple numericals |
| | 5th | |
| 2 | 1st | Design rectangular sunk key |
| | 2nd | Design of rectangular sunk key considering its failure against shear & crushing. |
| | 3rd | Design rectangular sunk key using empirical relation |
| | 4th | State specification of // keys |
| | 5th | |
| 3 | 1st | State types of keys:- gib head; taper key. |
| | 2nd | Solve simple numericals. |
| | 3rd | Design of shaft coupling. |
| | 4th | Requirement of a good shaft coupling. |
| | 5th | |

Theory Topics

| WEEK | Class Day | |
|------|-----------|--|
| 10 | 1st | Types of coupling |
| | 2nd | Design of sleeve coupling |
| | 3rd | Design of Muff-coupling |
| | 4th | Solve simple numericals on above. |
| | 5th | |
| 11 | 1st | Design of clamp or compression coupling. |
| | 2nd | Solve simple numericals on above. |
| | 3rd | Materials used for helical spring |
| | 4th | Solve simple numericals on above. |
| | 5th | |
| 12 | 1st | Standard size of spring wire. |
| | 2nd | Terms used in compression of spring |
| | 3rd | Stress in helical spring of a circular wire. |
| | 4th | Revision of above subjects. |
| | 5th | |

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 Discipline: Me
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| Discipline: Mech. | Semester: 5th | Name of the Teaching Faculty: Ajitav Sahoo | |
| Subject: D.M.E | No of Days/Week Class Allotted: 4 | Semester From date: 15/09/22 To date: 21/01/23 | No. of Weeks: |

| WEEK | Class Day | Theory Topics |
|------|-----------|---|
| 13 | 1st | Deflection of helical spring of circular wire. |
| | 2nd | Surge in spring |
| | 3rd | Mock test |
| | 4th | Solve numericals on spring. |
| | 5th | |
| 14 | 1st | Design of spring based on strength. |
| | 2nd | Design of spring based on shear stress |
| | 3rd | Design of spring on combined bending torsion |
| | 4th | Simple problems |
| | 5th | |
| 15 | 1st | Design of spring based on modulus of rigidity. |
| | 2nd | Revision of above topics |
| | 3rd | Solve simple problems on spring. |
| | 4th | Solve numericals on closed coil helical spring. |
| | 5th | Satyanam Acharyya |