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| **Name of the Faculty** | **:** |  Krishan Chandra |  |  |  |
| **Discipline** | **:** | **Civil Engineering** |  |  |  |
| **Semester** | **:** | **6th** |  |  |  |
| **Subject** | **:** | **Steel Structure Design** |  |  |  |

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| **Lesson Plan Duration :** | **14 Weeks (from 15.02.2024 to 14.06.2024)** |
|  |  |  |  |
| **Week** |  |  | **Theory** |
|  | **Lecture Day** |  | **Topic (including assignment / test)** |
| 1st | 1 |  | 1. Structural Steel and Sections: 1.1 Properties of structural steel as per IS Code |
|  |  2 |  | 1.2 Designation of structural steel sections as per IS handbook and IS:800 |
|  | 3 |  | 2. Riveted Connections Types of Rivet, Permissible stresses in rivets, types of riveted joints, |
|  |  4 | Specifications as per IS800, Failure of riveted joint, strength and efficiency of riveted joint,  |
|  |
| 2nd | 1 |  | Design of Riveted Connection only axially loaded number (No staggered rivetting) |
|  | 2 |  | 3. Bolt Connections: Types of bolt, permissible stresses in bolt, types of bolted joints |
|  | 3 |  | specifications for bolted joints as per IS 800.  |
|  |  4 | Failure of a bolted joint. Assumptions in the theory of bolted joints. |
|  |
| 3rd | 1 |  | Strength and efficiency of a bolted joint.  |
|  |  |  |  |
|  | 2 |  | Design of bolted joints for axially loaded members ( No Staggered bolts). |
|  | 3 |  | 4. Welded connections: Types of welds and welded joints, |
|  |  4 | advantages and disadvantages of welded joints |
|  |
| 4th | 1 |  | Design of fillet and butt weld for axially loaded members |
|  | 2 |  | Revision/ Assignment No I |
|  |  |  |  |
|  | 3 |  | First Sessional |
|  |  |  |  |
|  |  |  |  |
|  |  4 | 5. Tension Members Analysis and design of single and double section tension members and their rivetted and welded connections with gusset plate as per IS:800-2007 |
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|  |
|  |
| 5th | 1 |  | DO |
|  | 2 |  | DO |
|  | 3 |  | DO |
|  |  4 | DO |
|  |
|  | 1 |  |  DO |
| 6th | 2 | DO |
|  | 3 | DO |
|  | 4 | DO |
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| 7tht | 1 |  | 6. Compression Members Analysis and design of single and double angle sections compression members subjected to axial load |
|  |  2 |  | DO |
|  | 3 |  | DO |
|  |  4 |  DO | DO |
|  | DO |
| 8th | 1 |  | DO |
|  | 2 |  |  DO |
|  | 3 |  |  DO |
|  |  4 |  DO |
|  |
| 9th | 1 |  |  DO |
|  |  |  |  |
|  | 2 |  | 7. Roof Trusses Form of trusses, pitch of roof truss, spacing of trusses,  |
|  | 3 |  | spacing of purlins, connection between purlin and roof covering. |
|  |  4 | Connection between purlin and principal rafter (nodesign, only concept) |
|  |
| 10th | 1 |  | Revision/ Assignment No II |
|  | 2 |  | Second Sessional |
|  |  |  |
|  | 3 |  | 8. Column Bases: Types of column bases i.e. slab base,  |
|  |  |  |  |
|  |  |  |  |
|  |  4 | gusseted base.Concept of buckling, effectivelength, |
|  |
|  |
|  |
| 11th | 1 |  | slenderness ratio, |
|  | 2 |  | Analysis and Design of axially loaded single section column. |
|  | 3 |  | 9. Beams Analysis and design of single section simply supported laterally restrained steel beams. |
|  |  4 | DO |
|  |
|  | 1 |  |  DO |
| 12th | 2 |  |
|  | 3 | Introduction to plate girder and functions of various elements of a plate girder |
|  | 4 | DO |

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| 13th | 1 |  | 10. Fabrication and erection of steel structures like trusses, columns and girders |
|  | 2 |  | DO |
|  | 3 |  | DO |
|  |  4 | DO |
|  |
|  | 1 |  |  DO |
| 14th | 2 |  Revision/ Assignment No III |
|  | 3 | Third Sessional |
|  | 4 | Revision |