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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. | |
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| 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 (no  design, only concept) | |
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| 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, effective  length, | |
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| 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 | |