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| **PROGRAMME : CIVIL ENGINEERING**<br>**COURSE NAME :** STRUCTURAL DESIGN– II<br>**COURSE CODE : TH-2**<br>**SEMESTER : 5TH**<br>**PERIODS/WEEK: 4**<br>**TOTAL PERIODS: 60** | **NAME OF THE FACULTY: PRIYAJIT BEHERA**<br>**SESSION : 2020-2021**<br>**DATE : 01-09-2020 to 19-03-2021** |

| WEEK | CLASS | TOPICS |
|---|---|---|
| 1 | 1 | Common steel structures, Advantages & disadvantages of steel structures |
| | 2 | Types of steel, properties of structural steel. |
| | 3 | Types of steel, properties of structural steel. |
| | 4 | Rolled steel sections, special considerations in steel design |
| 2 | 1 | Loads and load combinations |
| | 2 | Structural analysis and design philosophy |
| | 3 | Brief review of Principles of Limit State design |
| | 4 | Brief review of Principles of Limit State design |
| 3 | 1 | Brief review of Principles of Limit State design |
| | 2 | Bolted Connections |
| | 3 | Bolted Connections |
| | 4 | Classification of bolts, advantages and disadvantages of bolted connections |
| 4 | 1 | Different terminology, spacing and edge distance of bolt holes |
| | 2 | Types of bolted connections |
| | 3 | Types of action of fasteners, assumptions and principles of design. |
| | 4 | Strength of plates in a joint, strength of bearing type bolts (shear capacity& bearing capacity), reduction factors, and shear capacity of HSFG bolts. |
| 5 | 1 | Analysis & design of Joints using bearing type and HSFG bolts (except eccentric load and prying forces) |
| | 2 | Efficiency of a joint, Welded Connections:, |
| | 3 | Advantages and Disadvantages of welded connection |
| | 4 | Types of welded joints and specifications for welding |
| 6 | 1 | Design stresses in welds. Strength of welded joints. |
| | 2 | Common shapes of tension members. |
| | 3 | Maximum values of effective slenderness ratio |
| | 4 | Analysis and Design of tension members.( Considering strength only and concept of block shear failure |
| 7 | 1 | Common shapes of compression members. |
| | 2 | Buckling class of cross sections, slenderness ratio |
| | 3 | Design compressive stress and strength of compression members |
| | 4 | Analysis and Design of compression members (axial load only). |
| 8 | 1 | Common cross sections and their classification. |
| | 2 | Common cross sections and their classification. |
| | 3 | Common cross sections and their classification. |
| | 4 | Deflection limits, web buckling and web crippling |
| 9 | 1 | Deflection limits, web buckling and web crippling |
| | 2 | Design of laterally supported beams against bending and shear. |
| | 3 | Round Tubular Sections, Permissible Stresses |
| | 4 | Round Tubular Sections, Permissible Stresses |

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| **10** | **1** | Tubular Compression & Tension Members |
| | **2** | Tubular Compression & Tension Members |
| | **3** | Tubular Compression & Tension Members |
| | **4** | Tubular Compression & Tension Members |
| **11** | **1** | Joints in Tubular trusses |
| | **2** | Joints in Tubular trusses |
| | **3** | Design considerations for Masonry walls & Columns |
| | **4** | Load Bearing |
| **12** | **1** | Load Bearing & Non-Load Bearing walls |
| | **2** | Load Bearing & Non-Load Bearing walls |
| | **3** | Permissible stresses |
| | **4** | Slenderness Ratio |
| **13** | **1** | Slenderness Ratio |
| | **2** | Effective Length, Height & Thickness |
| | **3** | Effective Length, Height & Thickness |
| | **4** | Effective Length, Height & Thickness |
| **14** | **1** | Revision of Chapter-1: |
| | **2** | Revision of Chapter-2 |
| | **3** | Revision of Chapter-3: |
| | **4** | Revision of Chapter-4: |
| **15** | **1** | Revision of Chapter-5: |
| | **2** | Revision of Chapter-6: |
| | **3** | Revision of Chapter-7: |
| | **4** | Revision of Chapter-7: |