BHUBANANANDA ODISHA SCHOOL OF ENGINEERING, CUTTACK

DEPARTMENT OF CIVIL ENGINEERING



LESSON PLAN

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| SUBJECT: STRUCTURAL DESIGN II (TH2) | ACCADEMIC SESSION: 2021-22 |
| FACULTY: SRI KANIT PALAKIA | SEMESTER: 5TH |
|  | SEC: B |

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| Sd/- |
| H O D (Civil Engg.) |

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| Discipline:  Civil Engineering | Semester:  3rd | | Name of the teaching faculty:  **Sri Kanit Palakia** |
| Subject:  **STRUCTURAL DESIGN II** | No of days per week class allotted: **04 periods/week**  **(Wed, Thu, Fri and sat-1 period each)** | | Semester : From date: 01-10-2021 to date : 08-01-2022  No of weeks: 13 weeks |
| Week | Class Day | No of period available | Theory/Practical topic |
| 1st | 04-10-2021 | 1 | 1.1 Common steel structures, Advantages & disadvantages of steel structures.  1.2 Types of steel, properties of structural steel. |
| 05-10-2021 | 1 | 1.3 Rolled steel sections, special considerations in steel design.  1.4 Loads and load combinations. |
| 08-10-2021 | 1 | 1.5 Structural analysis and design philosophy. |
| 2nd | 22-10-2021 | 1 | 1.6 Brief review of Principles of Limit State design. |
| 3rd | 25-10-2021 | 1 | 2.1 Bolted Connections  2.1.1 Classification of bolts, advantages and disadvantages of bolted connections. |
| 26-10-2021 | 1 | 2.1.2 Different terminology, spacing and edge distance of bolt holes. |
| 27-10-2021 | 1 | 2.1.3 Types of bolted connections. 2.1.4 Types of action of fasteners, assumptions and principles of design. |
| 29-10-2021 | 1 | Monthly class test |
| 4th | 01-11-2021 | 1 | 2.1.5 Strength of plates in a joint, strength of bearing type bolts (shear capacity& bearing capacity), reduction factors. |
| 02-11-2021 | 1 | 2.1.7 Efficiency of a joint.  2.1.5 Strength of plates in a joint, strength of bearing type bolts (shear capacity& bearing capacity), reduction factors. |
| 03-11-2021 | 1 | 2.1.6 Analysis & design of Joints using bearing type bolt. |
| 05-11-2021 | 1 | 2.1.6 Analysis & design of Joints using bearing type bolt. |
| 5th | 08-11-2021 | 1 | 2.1.6 Analysis & design of Joints using HSFG bolts |
| 09-11-2021 | 1 | 2.1.6 Analysis & design of Joints using HSFG bolts |
| 10-11-2021 | 1 | 2.2 Welded Connections:  2.2.1 Advantages and Disadvantages of welded connection |
| 12-11-2021 | 1 | 2.2.2 Types of welded joints and specifications for welding |
| 6th | 15-11-2021 | 1 | 2.2.3 Design stresses in welds. |
| 16-11-2021 | 1 | 2.2.4 Strength of welded joints. |
| 17-11-2021 | 1 | Discuss previous year questions |
| 7th | 22-11-2021 | 1 | 3.1 Common shapes of tension members. |
| 23-11-2021 | 1 | 3.2 Maximum values of effective slenderness ratio. |
| 24-11-2021 | 1 | 3.4 Analysis and Design of tension members.( Considering strength only and concept of block shear failure.) |
| 26-11-2021 | 1 | Monthly class test |
| 8th | 29-11-2021 | 1 | 3.4 Analysis and Design of tension members.( Considering strength only and concept of block shear failure.) |
| 30-11-2021 | 1 | 4.1 Common shapes of compression members.  4.2 Buckling class of cross sections, slenderness ratio |
| 01-12-2021 | 1 | Internal assessment |
| 03-12-2021 | 1 | Internal assessment |
| 9th | 06-12-2021 | 1 | 4.3 Design compressive stress and strength of compression members. |
| 07-12-2021 | 1 | 4.4 Analysis and Design of compression members (axial load only). |
| 08-12-2021 | 1 | 4.4 Analysis and Design of compression members (axial load only). |
| 10-12-2021 | 1 | Discuss previous year questions |
| 10th | 13-12-2021 | 1 | Design of Steel beams:  5.1 Common cross sections and their classification. |
| 14-12-2021 | 1 | 5.2 Deflection limits, web buckling and web crippling. |
| 15-12-2021 | 1 | 5.3 Design of laterally supported beams against bending and shear. |
| 17-12-2021 | 1 | 5.3 Design of laterally supported beams against bending and shear. |
| 11th | 20-12-2021 | 1 | Discuss previous year questions |
| 21-12-2021 | 1 | 6.1 Round Tubular Sections, Permissible Stresses |
| 22-12-2021 | 1 | 6.2 Tubular Compression & Tension Members |
| 24-12-2021 | 1 | 6.3 Joints in Tubular trusses |
| 12th | 27-12-2021 | 1 | 6.3 Joints in Tubular trusses |
| 28-12-2021 | 1 | Monthly class test |
| 29-12-2021 | 1 | 7.1 Design considerations for Masonry walls & Columns, |
| 31-12-2021 | 1 | 7.1 Load Bearing & NonLoad Bearing walls, Permissible stresses, |
| 13th | 03-01-2022 | 1 | 7.1 Slenderness Ratio, Effective Length, Height & Thickness. |
| 04-01-2022 | 1 | Discuss previous year questions |
| 05-01-2022 | 1 | Revision |
| 07-01-2022 | 1 | Revision |