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| **Discipline**:- Mechanical Engg. | **Semester**:- **3rd** | **Name of the Teaching Faculty:-**Er.RASHMITA MAHAPTRA  |
| **Subject**:-**STRENGTH OF MATERIAL** | **No. Of days/week class allotted** - **05** | **Semester from**: 01.08.2023To: 30.11.2023 |
| No. Of weeks:- 17 |
| **Week** | **No. Of Period** | **Theory Topics** |
| 01.08.2023To05.08.2023 | 1st | Introduction of Strength of material  |
| 2nd | Types of load |
| 3rd | stresses & strains(Axial and tangential) |
| 4th | Hooke’s law |
| 5th | Young’s modulus, bulk modulus, |
| 07.08.2023To 12.08.2023 | 1st | modulus of rigidity, Poisson’s ratio |
| 2nd | **INDEPENDENCE DAY** |
| 3rd | derive the relation between three elastic constants |
| 4th | Principle of super position |
| 5th | Stresses in composite section  |
| 14.08.2023To 19.08.2023 | 1st | Temperature stress |
| 2nd | Solve numericals |
| 3rd | determine the temperature stress in composite bar (single core) |
| 4th | Strain energy and resilience |
| 5th | Stress due to gradually applied |
| 21.08.2023To26.08.2023 | 1st | suddenly applied and impact load |
| 2nd | Solve numerical on above. |
| 3rd | Definition of hoop and longitudinal stress |
| 4th | Derivation of hoop stress, longitudinal stress |
| 5th | Derivation hoop strain, longitudinal strain and volumetric strain |
| **Week** | **No. Of period** |  |
| 28.08.2023To 02.09.2023 | 1st | Computation of the change in length, diameter and volume |
| 2nd | Simple problems on above |
| 3rd | **RAKSHA BANDHAN** |
| 4th | Revision of the chapter 1 and 2 |
| 5th | Determination of normal stress on oblique plane  |
| 04.09.2023To09.09.2023 | 1st | shear stress and resultant stress on oblique plane |
| 2nd | Location of principal plane and computation of principal stress |
| 3rd | **JANMASTAMI** |
| 4th | Determination of normal stress on oblique plane  |
| 5th | shear stress and resultant stress on oblique plane |
| 11.09.2023To16.09.2023 | 1st | Location of principal plane and computation of principal stress |
| 2nd | Location of principal plane and computation of principal stress |
| 3rd | Maximum shear stress using Mohr’s circle  |
| 4th | Solve Numerical |
| 5th | Solve Numerical |
| 18.09.2023To23.09.2023 | 1st | Types of beam and load |
| 2nd | **GANESH CHATURTHI** |
| 3rd | **NUAKHAI** |
| 4th | Concepts of Shear force and bending moment  |
| 5th | Shear Force and Bending moment diagram |

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| **Week** | **No. Of period** | **Theory Topics** |
| 25.09.2023To 30.09.2023 | 1st | Salient features of SFD & BMD |
| 2nd | SFD AND BMD of point load in cantilever beam |
| 3rd | SFD AND BMD of point load in simply supported beam and over hanging beam |
| 4th | **BIRTHDAY OF MAHAMMUD** |
| 5th | Uniformly distributed load |
| 02.10.2023To 07.10.2023 | 1st | **GANDHI JAYANTI** |
| 2nd | uniformly distributed load in cantilever beam |
| 3rd | Uniformly distributed load in simply supported beam and over hanging beam |
| 4th | Solve numerical  |
| 5th | Solve numerical |
| 09.10.2023To 14.10.2023 | 1st | Assumptions in the theory of bending, |
| 2nd | Bending equation |
| 3rd | Moment of resistance |
| 4th | Section modulus & neutral axis |
| 5th | **MAHALAYA** |
| 16.10.2023To 21.10.2023 | 1st | Solve simple problems |
| 2nd | Define column |
| 3rd | Axial load, Eccentric load on column, |
| 4th | Direct stresses, Bending stresses |
| 5th | Maximum& Minimum stresses, |
| 23.10.2023To 28.10.2023 |  | **DURGAPUJA HOLIDAYS** |
|  30.10.2023 To 04.11.2023 | 1st | Numerical problems on above. |
| 2nd | Revision of the chapter |
| 3rd | Buckling load computation using Euler’s formula |
| 4th | Numerical problems on above |
| 5th | Torsion |

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| **Week** | **No.of period** | **Theory Topics** |
| 06.11.2023To 11.11.2023 | 1st | Assumption of pure torsion |
| 2nd | The torsion equation for solid |
| 3rd | The torsion equation for hollow circular shaft  |
| 4th | Solve numerical |
| 5th | Comparison between solid and hollow shaft subjected to pure torsion |
| 13.11.2023To18.11.2023 | 1st | Revision of the chapter |
| 2nd | Previous year short question discussion 2023 w |
| 3rd | Solve numerical on bending moment and sfd |
| 4th | Solve numerical on BMD and SFD |
| 5th | Previous year question discussion  |
| 20.11.2023To 25.11.2023 | 1st | Solve numerical stress on principal plane |
| 2nd | **ANLA NAVAMI** |
| 3rd | Solve numerical stress on principal plane  |
| 4th | Solve numerical on Mohr’s circle |
| 5TH | Solve numerical on torsion  |
| 27.11.2023To30.11.2023 | 1st | **RAHAS PURNIMA** |
| 2nd | Previous year long question discussion |
| 3rd | Previous year short question discussion |
|  |  | **CLOSING OF ATTENDANCE** |