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| Dicipline: MECHANICAL ENGINEERING | Semester: 3rd | Name of the Teaching Faculty: PARESH KUMAR MAJI | |
| Subject: STRENGTH OF MATERIAL | No of Days/Week Class Allotted: 4 | Semester From date: 15-09-22 To date: _____ | No. of Weeks: 15 |

| WEEK | Class Day | Theory Topics |
|----------------------------------|-----------------|---|
| 15-16-9-22 19-09-22 2st | 1st 15-09-22 | Simple Stress & Strain:- Definition, Types of load. Hooke's law Young's modulus. |
| | 2nd 16-09-22 | Brick Modulus, Modulus of rigidity, Poisson's ratio. |
| | 3rd 19-09-22 | Derivation between three elastic constants. Principle of superposition & stresses in composite section. |
| | 4th | |
| | 5th | |
| 21-09-22 to 24-9-22 2nd | 1st 21-09-22 | Temperature stress, determine the temperature stress in composite bar. |
| | 2nd 22-09-22 | Strain Energy and Resilience |
| | 3rd 23-09-22 | Stress with different cases load - gradually applied Sudden applied and Impact load |
| | 4th 24-09-22 | problem solve on above. |
| | 5th | |
| 26-9-22 to 30-9-22 3rd | 1st 26-09-22 | problem practice & doubt clearing |
| | 2nd 28-9-22 | problem practice & doubt clearing |
| | 3rd 29-9-22 | <u>Thin cylinder & Spherical shell Under internal pressure:-</u> Definition, Hoop & Longitudinal Stress & Strain |
| | 4th 30-9-22 | Derivation of Hoop Stress. |
| | 5th | |

| WEEK | Class Day | Theory Topics |
|--|-----------------|---|
| 10-10-22 & 12-10-22 to 14-10-22 4th | 1st 10-10-22 | Derivation of Longitudinal Stress & hoop strain |
| | 2nd 12-10-22 | Derivation of Longitudinal strain, and Volumetric strain. |
| | 3rd 13-10-22 | Computation of change in length |
| | 4th 14-10-22 | Computation of change in diameter. |
| | 5th | |
| 17-10-22 & 19-10-22 to 21-10-22 5th | 1st 17-10-22 | Computation of change in Volume. |
| | 2nd 19-10-22 | Problem practice of above. |
| | 3rd 20-10-22 | <u>Two-Dimension stress system:-</u> Determination of normal stress on oblique plane |
| | 4th 21-10-22 | Determination of Shear Stress on oblique plane. |
| | 5th | |
| 24-10-22 & 26-10-22 to 28-10-22 6th | 1st 24-10-22 | Determination of resultant stress on oblique plane |
| | 2nd 26-10-22 | Location of principal plane. |
| | 3rd 27-10-22 | Computation of principal stress. |
| | 4th 28-10-22 | Location of principal stress |
| | 5th | |

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| Discipline: MECHANICAL ENGINEERING | Semester: 3rd | Name of the Teaching Faculty: PARESH KUMAR MAJI | |
| Subject: STRENGTH OF MATERIALS | No. of Days/Week Class Allotted: 1 | Semester From date: 18-09-22 To date: _____ | No. of Weeks: 15 |

| WEEK | Class Day | Theory Topics |
|--|-----------------|---|
| 1-10-22 A 4-11-22 TO 7-11-22 74 | 1st 31-10-22 | Computation of principal stresses. |
| | 2nd 2-11-22 | Max's error |
| | 3rd 3-11-22 | Problem practice on above. |
| | 4th 4-11-22 | problem practice & doubt clearing |
| | 5th | |
| 7-11-22 9-11-22 TO 11-11-22 58 | 1st 7-11-22 | <u>Bending moment & Shear Force</u> :- Types of beam and load. |
| | 2nd 9-11-22 | Concept of shear force and bending moment. |
| | 3rd 10-11-22 | S.F. & B.M Diagram |
| | 4th 11-11-22 | Silent features of S.F. & B.M. |
| | 5th | |
| | 1st | |
| | 2nd | |
| | 3rd | |
| | 4th | |
| | 5th | |

| WEEK | Class Day | Theory Topics |
|---|-----------------|---|
| 14-11-22 x 16-11-22 to 18-11-22 9th | 1st 14-11-22 | Types of Beams Cantilever and Simple Supported beam. |
| | 2nd 16-11-22 | Over hanging beam. |
| | 3rd 17-11-22 | point load |
| | 4th 18-11-22 | Uniformly distributed load. |
| | 5th | |
| 21-11-22 x 23-11-22 to 25-11-22 10th | 1st 21-11-22 | Problem Solving on S.F. & B.M. |
| | 2nd 23-11-22 | Problem Solving & doubt clearing. |
| | 3rd 24-11-22 | <u>Theory of Simple Bending</u> :- Assumptions. |
| | 4th 25-11-22 | Theory of Simple bending |
| | 5th | |
| 28-11-22 x 30-11-22 to 2-12-22 11th | 1st 28-11-22 | Bending equation. |
| | 2nd 30-11-22 | Moment of resistance |
| | 3rd 1-12-22 | Section modulus |
| | 4th 2-12-22 | Neutral axis. |
| | 5th | |

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| Subject: STRENGTH OF MATERIAL | No of Days/Week Class Allotted: 4 | Semester From date: 15-09-22 To date: _____ | No. of Weeks: 15 |

| WEEK | Class Day | Theory Topics |
|---|-----------------|--|
| 5-12-22 & 7-12-22 to 9-12-22 12th | 1st 5-12-22 | Assumptions in the theory of bending with prob |
| | 2nd 7-12-22 | Problem solving & doubt clearing |
| | 3rd 8-12-22 | Problem solving & doubt clearing |
| | 4th 9-12-22 | Neutral axis problem solving & doubt clearing. |
| | 5th | |
| 12-12-22 & 14-12-22 to 16-12-22 13th | 1st 12-12-22 | <u>Combined direct & bending stresses</u> :- Define Column. |
| | 2nd 14-12-22 | Axial load |
| | 3rd 15-12-22 | Eccentric Load |
| | 4th 16-12-22 | Numerical on above |
| | 5th | |
| 19th 19-12-22 & 21-12-22 to 23-12-22 | 1st 19-12-22 | Buckling load computation. |
| | 2nd 21-12-22 | Euler's formula in column with various end conditions. |
| | 3rd 22-12-22 | <u>Torsion</u> :- Assumption of pure torsion. |
| | 4th 23-12-22 | The torsion equation |
| | 5th | |

| WEEK | Class Day | Theory Topics |
|------------------------------------|-----------------|---|
| 15th 26-12-22 to 30-12-22 | 1st 26-12-22 | Hollow circular shaft. |
| | 2nd 28-12-22 | Comparison between solid & hollow shaft |
| | 3rd 29-12-22 | Hollow shaft subjected pure torsion |
| | 4th 30-12-22 | problem solving on above. |
| | 5th | |
| | 1st | |
| | 2nd | |
| | 3rd | |
| | 4th | |
| | 5th | |
| | 1st | |
| | 2nd | |
| | 3rd | |
| | 4th | |
| | 5th | |