SYNERGY POLYTECHNIC, BBSR

The Lesson Plan

Discipline: Mechanical Engg	Semester: 3rd	Name of the Teaching Faculty: Ashutosh Satpathy
Subject: SOM	No of Days/per week class allotted:	Semester from Date: 01/07/2024 to Date: 31/07/2024 No of Weeks: 05
Week	Class Day	Theory/Practical Topics
1st	1st	Types of load
	2nd	Study of stresses & strains
	3rd	Study of Hooke's law
	4th	Young's modulus, bulk modulus, modulus of rigidity
2nd	1st	Study of Poisson's ratio
	2nd	Derive the relation between three elastic constants
	3rd	Principle of super position
	4th	Stresses in composite section
3rd	1st	Determine the temperature stress in composite bar
	2nd	Study Strain energy and resilience
	3rd	Stress due to gradually applied
	4th	Study suddenly applied and impact load
4th	1st	Definition of hoop and longitudinal stress, strain
	2nd	Derivation of hoop stress
	3rd	Derivation of longitudinal stress & hoop strain
	4th	Derive longitudinal strain and volumetric strain
5th	1st	Computation of the change in length
	2nd	Determination of normal stress
	3rd	Determination of shear stress
	4th	

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SYNERGY POLYTECHNIC, BBSR

The Lesson Plan

Discipline: Mechanical Engg	Semester: 3rd	Name of the Teaching Faculty: Ashutosh Satpathy
Subject: SOM	No of Days/per week class allotted:	Semester from Date: 01/08/2024 to Date: 31/08/2024 No of Weeks: 05
Week	Class Day	Theory/Practical Topics
1st	1st	Study resultant stress on oblique plane
	2nd	Location of principal plane
	3rd	Computation of principal stress
	4th	
	5th	
2nd	1st	Location of principal plane
	2nd	Computation of principal stress
	3rd	Study the maximum shear stress using Mohr's circle
	4th	Study types of beam and load
	5th	
3rd	1st	Concepts of Shear force
	2nd	Concepts of bending moment
	3rd	Study the Shear Force and Bending moment diagram
	4th	Illustration in cantilever beam
	5th	
4th	1st	Simply supported beam and over hanging beam under point load
	2nd	Simply supported beam and over hanging beam under uniformly distributed load
	3rd	Assumptions in the theory of bending
	4th	Numerical on theory of bending
	5th	
5th	1st	Study Bending equation
	2nd	Study Moment of resistance
	3rd	Study Section modulus & neutral axis
	4th	Solve numerical on Bending equation and Moment of resistance
	5th	

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iscipline: Mechanical Engg	Semester: 3rd	Name of the Teaching Faculty: Ashutosh Satpathy
Subject: SOM	No of Days/per week class allotted:	Semester from Date: 01/09/2024 to Date: 30/09/2024 No of Weeks: 04
Week	Class Day	Theory/Practical Topics
1st	1st	Solve numerical on Section modulus
	2nd	Solve numerical on neutral axis
	3rd	Define column and its types
	4th	Numerical on stress acting on column
	5th	
2nd	1st	Study Axial load on column
	2nd	Numerical on load acting on column
	3rd	Eccentric load on column
	4th	Numerical on Eccentric load on column
	5th	
3rd	1st	Study Direct stresses
	2nd	Solve numerical Direct stresses
	3rd	Study Bending stresses
	4th	Solve numerical on Bending stresses
	5th	
4th	1st	Study Maximum& Minimum stresses
	2nd	Solve numerical on Maximum& Minimum stresses
	3rd	Study Buckling load
	4th	Buckling load computation using Euler's formula
	5th	
5th	1st	
	2nd	
	3rd	
	4th	
	5th	

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SYNERGY POLYTECHNIC, BBSR

The Lesson Plan

Discipline: Mechanical Engg	Semester: 3rd	Name of the Teaching Faculty: Ashutosh Satpathy
Subject: SOM	No of Days/per week class allotted:	Semester from Date: 01/10/2024 to Date: 31/10/2024 No of Weeks: 05
Week	Class Day	Theory/Practical Topics
1st	1st	Study of pure torsion
	2nd	Assumption of pure torsion
	3rd	Numericals on pure torsion
	4th	Brief study of torsion
	5th	
2nd	1st	The torsion equation for solid shaft
	2nd	Numericals on torsion equation for solid shaft
	3rd	
	4th	
	5th	
3rd	1st	The torsion equation for hollow circular shaft
	2nd	Numericals on torsion equation for hollow circular shaft
	3rd	
	4th	
	5th	
4th	1st	Study solid shaft subjected to pure torsion
	2nd	Numerical on solid shaft subjected to pure torsion
	3rd	Study hollow shaft subjected to pure torsion
	4th	Numerical on hollow shaft subjected to pure torsion
	5th	
5th	1st	Comparison of solid hollow shaft subjected to pure torsion
	2nd	Diagram of solid and hollow shaft subjected to pure torsion
	3rd	
	4th	
	5th	

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