ARYAN SCHOOL OF ENGINEERING & TECHNOLOGY

Dicipline: Mechanical	Semester: 3rd	Name of the Teaching Faculty: Babita Meher	
Subject: Strength of material	No of Days/Week Class Allotted: 4	Semester From date: 15.09.22 To date 21.01.23	No.of Weeks:

WEEK	Class Day	Theory Topics
1st	1st	Types of load
	2nd	Stress and strains (Axial & tangential)
	3rd	Hooke's law, Young's modulous, bulk modulous
	4th	Modulous of rigidity, Poisson's ratio
	5th	
2nd	1st	Derive the relation between 3 elastic constants
	2nd	Principle of super position
	3rd	Stress in composite section
	4th	Temperature stress and it's explanation
	5th	
3rd	1st	Determine the temperature stress in composite bars
	2nd	Strain energy and resilience
	3rd	Stress due to gradually applied, suddenly applied and impact load.
	4th	Simple problems on above.
	5th	

WEEK	Class Day	Theory Topics
4th	1st	Define hoop & longitudinal stress, strain
	2nd	Derivation of hoop stress, longitudinal stress and the relation between them
	3rd	Derivation of hoop strain, longitudinal strain and volumetric strain
	4th	Computation of change in length, diameter and volume
	5th	
5th	1st	Simple problems on thin cylinder.
	2nd	Determination of normal stress, shear stress and resultant stress on oblique plane
	3rd	Location of principal plane with details
	4th	Computation of principal stress.
	5th	
6th	1st	Maximum shear stress using Mohr's circle
	2nd	Simple problems on above.
	3rd	Types of beam and classify
	4th	Types of load and classify.
	5th	

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Discipline:		Semester:	Name of the Teaching Faculty: Babita Mehere	
Subject: Strength of materials		No of Days/Week Class Allotted: 4	Semester From date: 15.09.22 To date 21.01.23	No.of Weeks:

WEEK	Class Day	Theory Topics
7th	1st	Concept of shear force and bending moment.
	2nd	Shear force and bending moment diagram.
	3rd	Sign convention of S.F & B.M.
	4th	Illustration of cantilever beam, simply supported beam and over hanging beam center point load and u.d.l.
	5th	
8th	1st	Simple numericals on S.F & B.M.
	2nd	Assumptions in theory of bending
	3rd	Bending equation
	4th	Moment of resistance with diagram
	5th	
9th	1st	Section modulus and neutral axis
	2nd	Solve simple problems.
	3rd	Define column.
	4th	Monthly revision class.
	5th	

WEEK	Class Day	Theory Topics
10th	1st	Axial load, eccentric load on column.
	2nd	Simple numericals on above
	3rd	Direct stresses
	4th	Bending stresses
	5th	
11th	1st	Maximum and minimum stresses
	2nd	Numericals on above
	3rd	Weekly surprise test.
	4th	Define buckling load
	5th	
12th	1st	Buckling load computation using Euler's formula
	2nd	Euler's formula at various end connection.
	3rd	Simple problems on above
	4th	Weekly test.
	5th	

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Discipline: Mechanical	Semester:	Name of the Teaching Faculty: Babita Meher	
Subject: Strength of material	No of Days/Week Class Allotted: 4	Semester From date: 15/09/22 To date 21/01/23	No.of Weeks:

WEEK	Class Day	Theory Topics
13th	1st	Assumption of pure torsion.
	2nd	Torsion equation for solid shaft.
	3rd	Torsion eqn. for hollow shaft
	4th	Simple problems on above.
	5th	
14th	1st	Solid shaft with detailed properties
	2nd	Monthly revision test
	3rd	Hollow shaft with details.
	4th	Mock test
	5th	
15th	1st	Comparision between solid and hollow shaft
	2nd	details of pure torsion
	3rd	Revision class
	4th	Surprise test.
	5th	Satyabam Acharya