GANDHI SCHOOL OF ENGINEERING
BHABANDHA, BERHAMPUR
SESSION PLAN
3RD SEMESTER, BRANCH-MECHANICAL(GROUP 1)
STRENGTH OF MATERIAL(TH-2)

Name of the Faculty –ER. SANJAY KUMAR PANIGRAHY							
Topics to be taken				**Actually taken**			
SL NO & CHAPTER	**No. of Periods assigned by SCTE & VT**	**Details of the topics**	**PLANNED DATE**	**Details of the topics**	**ACTUAL DATE**	**Remarks**	
1. Simple stress& strain	**10**	1.1 Types of load, stresses & strains,(Axial and tangential) Hookes law, Young's modulus, bulk modulus, modulus of rigidity, Poisson's ratio, derive the relation between three elastic constants, 1.2 Principle of super position, stresses in composite section 1.3 Temperature stress, determine the temperature stress in composite bar (single core) 1.4 Strain energy and resilience, Stress due to gradually applied, suddenly applied and impact load 1.5 Simple problems on above.	**1/08/2023 TO 18/08/2023**	1.1 Types of load, stresses & strains,(Axial and tangential) Hookes law, Young's modulus, bulk modulus, modulus of rigidity, Poisson's ratio, derive the relation between three elastic constants, 1.2 Principle of super position, stresses in composite section 1.3 Temperature stress, determine the temperature stress in composite bar (single core) 1.4 Strain energy and resilience, Stress due to gradually applied, suddenly applied and impact load 1.5 Simple problems on above.	**1/08/2023** **2/08/2023** **4/08/2023** **5/08/2023** **8/08/2023** **9/08/2023** **11/08/2023** **12/08/2023** **16/08/2023** **18/08/2023**	

Unit	Hours	Topics	Planned Dates	Topics	Actual Dates
2. Thin cylinder and spherical shell under internal pressure	**8**	2.1 Definition of hoop and longitudinal stress, strain 2.2 Derivation of hoop stress, longitudinal stress, hoop strain, longitudinal strain and volumetric strain 2.3 Computation of the change in length, diameter and volume 2.4 Simple problems on above	19/08/2023 TO 2/09/2023	2.1 Definition of hoop and longitudinal stress, strain 2.2 Derivation of hoop stress, longitudinal stress, hoop strain, longitudinal strain and volumetric strain 2.3 Computation of the change in length, diameter and volume 2.4 Simple problems on above	19/08/2023 22/08/2023 23/08/2023 25/08/2023 26/08/2023 29/08/2023 1/09/2023 2/09/2023
3. Two dimensional stress systems	**10**	3.1 Determination of normal stress, shear stress and resultant stress on oblique plane 3.2 Location of principal plane and computation of principal stress 3.3 Location of principal plane and computation of principal stress and maximum shear stress using Mohr's circle	8/09/2023 TO 26/09/2023	3.1 Determination of normal stress, shear stress and resultant stress on oblique plane 3.2 Location of principal plane and computation of principal stress 3.3 Location of principal plane and computation of principal stress and maximum shear stress using Mohr's circle	8/09/2023 9/09/2023 12/09/2023 13/09/2023 15/09/2023 16/09/2023 20/09/2023 22/09/2023 23/09/2023 26/09/2023

4. Bending moment& shear force	**10**	4.1 Types of beam and load 4.2 Concepts of Shear force and bending moment 4.3 Shear Force and Bending moment diagram and its salient features illustration in cantilever beam, simply supported beam and over hanging beam under point load and uniformly distributed load	**27/09/2023 TO 13/10/2023**	4.1 Types of beam and load 4.2 Concepts of Shear force and bending moment 4.3 Shear Force and Bending moment diagram and its salient features illustration in cantilever beam, simply supported beam and over hanging beam under point load and uniformly distributed load	**27/09/2023 29/09/2023 30/09/2023 3/10/2023 4/10/2023 6/10/2023 7/10/2023 10/10/2023 11/10/2023 13/10/2023**
5. Theory of simple bending	**10**	5.1 Assumptions in the theory of bending, 5.2 Bending equation, Moment of resistance, Section modulus& neutral axis. 5.3 solve simple problems	**17/10/2023 TO 10/11/2023**	5.1 Assumptions in the theory of bending, 5.2 Bending equation, Moment of resistance, Section modulus& neutral axis. 5.3 solve simple problems	**17/10/2023 18/10/2023 31/10/2023 1/11/2023 2/11/2023 3/11/2023 4/11/2023 7/11/2023 8/11/2023 10/11/2023**

6. Combined direct & Bending stresses	6	6.1 Define column 6.2 Axial load, Eccentric load on column, 6.3 Direct stresses, Bending stresses, Maximum& Minimum stresses. Numerical problems on above. 6.4 Buckling load computation using Euler's formula (no derivation) in columns with various end conditions	11/11/2023 TO 22/11/2023	6.1 Define column 6.2 Axial load, Eccentric load on column, 6.3 Direct stresses, Bending stresses, Maximum& Minimum stresses. Numerical problems on above. 6.4 Buckling load computation using Euler's formula (no derivation) in columns with various end conditions	11/11/2023 15/11/2023 17/11/2023 18/11/2023 21/11/2023 22/11/2023	
7. Torsion	6	7.1 Assumption of pure torsion 7.2 The torsion equation for solid and hollow circular shaft 7.3 Comparison between solid and hollow shaft subjected to pure torsion	24/11/2023 TO 6/12/2023	7.1 Assumption of pure torsion 7.2 The torsion equation for solid and hollow circular shaft 7.3 Comparison between solid and hollow shaft subjected to pure torsion REVISION-	24/11/2023 25/11/2023 28/11/2023 29/11/2023 1/12/2023 2/12/2023 6/12/2023 8/12/2023	

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SESSION PLAN
3RD SEMESTER, BRANCH-MECHANICAL(GROUP 2)
STRENGTH OF MATERIAL(TH-2)

Name of the Faculty –PROF. SUNIL KUMAR SABAT							
Topics to be taken				**Actually taken**			
SL NO & CHAPTER	**No. of Periods assigned by SCTE & VT**	**Details of the topics**	**PLANNED DATE**	**Details of the topics**	**ACTUAL DATE**	**Remarks**
1. Simple stress& strain	**10**	1.1 Types of load, stresses & strains,(Axial and tangential) Hookes law, Young's modulus, bulk modulus, modulus of rigidity, Poisson's ratio, derive the relation between three elastic constants, 1.2 Principle of super position, stresses in composite section 1.3 Temperature stress, determine the temperature stress in composite bar (single core) 1.4 Strain energy and resilience, Stress due to gradually applied, suddenly applied and impact load 1.5 Simple problems on above.	**2/08/2023 TO 17/08/2023**	1.1 Types of load, stresses & strains,(Axial and tangential) Hookes law, Young's modulus, bulk modulus, modulus of rigidity, Poisson's ratio, derive the relation between three elastic constants, 1.2 Principle of super position, stresses in composite section 1.3 Temperature stress, determine the temperature stress in composite bar (single core) 1.4 Strain energy and resilience, Stress due to gradually applied, suddenly applied and impact load 1.5 Simple problems on above.	**2/08/2023** **3/08/2023** **4/08/2023** **7/08/2023** **9/08/2023** **10/08/2023** **11/08/2023** **14/08/2023** **16/08/2023** **17/08/2023**	

2. Thin cylinder and spherical shell under internal pressure	**8**	2.1 Definition of hoop and longitudinal stress, strain 2.2 Derivation of hoop stress, longitudinal stress, hoop strain, longitudinal strain and volumetric strain 2.3 Computation of the change in length, diameter and volume 2.4 Simple problems on above	**18/08/2023 TO 1/09/2023**	2.1 Definition of hoop and longitudinal stress, strain 2.2 Derivation of hoop stress, longitudinal stress, hoop strain, longitudinal strain and volumetric strain 2.3 Computation of the change in length, diameter and volume 2.4 Simple problems on above	**18/08/2023** **21/08/2023** **23/08/2023** **24/08/2023** **25/08/2023** **28/08/2023** **31/08/2023** **1/09/2023**
3. Two dimensional stress systems	**10**	3.1 Determination of normal stress, shear stress and resultant stress on oblique plane 3.2 Location of principal plane and computation of principal stress 3.3 Location of principal plane and computation of principal stress and maximum shear stress using Mohr's circle	**4/09/2023 TO 22/09/2023**	3.1 Determination of normal stress, shear stress and resultant stress on oblique plane 3.2 Location of principal plane and computation of principal stress 3.3 Location of principal plane and computation of principal stress and maximum shear stress using Mohr's circle	**4/09/2023** **7/09/2023** **8/09/2023** **11/09/2023** **13/09/2023** **14/09/2023** **15/09/2023** **18/09/2023** **21/09/2023** **22/09/2023**

4. Bending moment& shear force	**10**	4.1 Types of beam and load 4.2 Concepts of Shear force and bending moment 4.3 Shear Force and Bending moment diagram and its salient features illustration in cantilever beam, simply supported beam and over hanging beam under point load and uniformly distributed load	**25/09/2023 TO 13/10/2023**	4.1 Types of beam and load 4.2 Concepts of Shear force and bending moment 4.3 Shear Force and Bending moment diagram and its salient features illustration in cantilever beam, simply supported beam and over hanging beam under point load and uniformly distributed load	**25/09/2023 27/09/2023 29/09/2023 4/10/2023 5/10/2023 6/10/2023 9/10/2023 11/10/2023 12/10/2023 13/10/2023**
5. Theory of simple bending	**10**	5.1 Assumptions in the theory of bending, 5.2 Bending equation, Moment of resistance, Section modulus& neutral axis. 5.3 solve simple problems	**16/10/2023 TO 10/11/2023**	5.1 Assumptions in the theory of bending, 5.2 Bending equation, Moment of resistance, Section modulus& neutral axis. 5.3 solve simple problems	**16/10/2023 18/10/2023 19/10/2023 1/11/2023 2/11/2023 3/11/2023 6/11/2023 8/11/2023 9/11/2023 10/11/2023**

6. Combined direct & Bending stresses	**6**	6.1 Define column 6.2 Axial load, Eccentric load on column, 6.3 Direct stresses, Bending stresses, Maximum& Minimum stresses. Numerical problems on above. 6.4 Buckling load computation using Euler's formula (no derivation) in columns with various end conditions	**15/11/2023 TO 23/11/2023**	6.1 Define column 6.2 Axial load, Eccentric load on column, 6.3 Direct stresses, Bending stresses, Maximum& Minimum stresses. Numerical problems on above. 6.4 Buckling load computation using Euler's formula (no derivation) in columns with various end conditions	**15/11/2023 16/11/2023** **17/11/2023 20/11/2023** **22/11/2023 23/11/2023**
7. Torsion	**6**	7.1 Assumption of pure torsion 7.2 The torsion equation for solid and hollow circular shaft 7.3 Comparison between solid and hollow shaft subjected to pure torsion	**24/11/2023 TO 7/12/2023**	7.1 Assumption of pure torsion 7.2 The torsion equation for solid and hollow circular shaft 7.3 Comparison between solid and hollow shaft subjected to pure torsion REVISION-	**24/11/2023 29/11/2023 30/11/2023 1/12/2023 4/12/2023 6/12/2023 7/12/2023** **8/12/2023**

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