

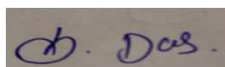


# UTKAL INSTITUTE OF ENGINEERING & TECHNOLOGY

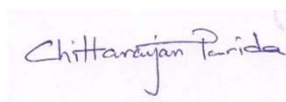
<b>DISCIPLINE:</b> Mechanical Engineering	<b>SEMESTER:</b> 3rd Sem	<b>NAME OF THE TEACHING FACULTY:</b> Er.Snehasis Das	
<b>SUBJECT:</b>  STRENGTH OF MATERIAL	No of Days/Per week class allotted: 4 Class P/W(60)	Semester From Date:15/09/2022  To Date:22/12/2022  No. Of Weeks: 15	
<b>WEEK</b>	<b>CLASS DAY</b>	<b>THEORY TOPICS</b>	<b>REMARKS</b>
1 <sup>st</sup>	1 <sup>st</sup>	Types of load, stresses & strains,(Axial and tangential) Hooke's law, Young's modulus, bulk modulus, modulus of rigidity, Poisson's ratio, derive the relation between three elastic constants,	Date Dean/Principal
	2 <sup>nd</sup>	Principle of super position, stresses in composite section	
	3 <sup>rd</sup>	Strain energy and resilience, Stress due to gradually applied,suddenly applied and impact load	
	4 <sup>th</sup>	Simple problems on above.	
2 <sup>nd</sup>	1 <sup>st</sup>	Doubt clear class	
	2 <sup>nd</sup>	Definition of hoop and longitudinal stress, strain	
	3 <sup>rd</sup>	Derivation of hoop stress, longitudinal stress, hoop strain, longitudinal strain and volumetric strain	
	4 <sup>th</sup>	Assignment	
3 <sup>rd</sup>	1 <sup>st</sup>	Assignment question Discussion	
	2 <sup>nd</sup>	Computation of the change in length, diameter and volume	
	3 <sup>rd</sup>	Simple problems on above	
	4 <sup>th</sup>	Determination of normal stress, shear stress and resultant stress on oblique plane	

4 <sup>th</sup>	1 <sup>st</sup>	Location of principal plane and computation of principal stress		
	2 <sup>nd</sup>	Location of principal plane and computation of principal stress and Maximum shear stress using Mohr's circle		
	3 <sup>rd</sup>	Types of beam and load		
	4 <sup>th</sup>	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		
5 <sup>th</sup>	1 <sup>st</sup>	Class Test		
	2 <sup>nd</sup>	Assumptions in the theory of bending,		
	3 <sup>rd</sup>	Bending equation, Moment of resistance, Section modulus & neutral axis		
	4 <sup>th</sup>	Solve simple problems.		
6 <sup>th</sup>	1 <sup>st</sup>	<b>Revision of Last Class</b>		
	2 <sup>nd</sup>	Assignment		
	3 <sup>rd</sup>	Define column		
	4 <sup>th</sup>	Direct stresses, Bending stresses, Maximum & Minimum stresses. Numerical problems on above		
7 <sup>th</sup>	1 <sup>st</sup>	Direct stresses, Bending stresses, Maximum & Minimum stresses. Numerical problems on above		
	2 <sup>nd</sup>	Doubt Clear Class		
	3 <sup>rd</sup>	Doubt clear Class		
	4 <sup>th</sup>	Assignment		
8 <sup>th</sup>	1 <sup>st</sup>	Assignment question Discussion		
	2 <sup>nd</sup>	Buckling load computation using Euler's formula (no derivation) in Columns with various end conditions		
	3 <sup>rd</sup>	Explain centrifugal casting such as true centrifugal casting, centrifuging with advantages, limitation and area of application		
	4 <sup>th</sup>	Doubt Clearing Class and Assignment Questions Discussion.		
	1 <sup>st</sup>	Assumption of pure torsion		

9 <sup>th</sup>	2 <sup>nd</sup>	The torsion equation for solid and hollow circular shaft		
	3 <sup>rd</sup>	Revision Class		
	4 <sup>th</sup>	Comparison between solid and hollow shaft subjected to pure torsion		
10 <sup>th</sup>	1 <sup>st</sup>	Comparison between solid and hollow shaft subjected to pure torsion		
	2 <sup>nd</sup>	Internal Question Discussion		
	3 <sup>rd</sup>	Doubt clear class		
	4 <sup>th</sup>	Comparison between solid and hollow shaft subjected to pure torsion		
11 <sup>th</sup>	1 <sup>st</sup>	Doubt Clear Class		
	2 <sup>nd</sup>	Revision		
	3 <sup>rd</sup>	Class Test		
	4 <sup>th</sup>	Class Test		
12 <sup>th</sup>	1 <sup>st</sup>	Doubt Clear Class		
	2 <sup>nd</sup>	Revision Class		
	3 <sup>rd</sup>	Doubt clear class		
	4 <sup>th</sup>	Last Class Discussion		
13 <sup>th</sup>	1 <sup>st</sup>	Internal Question Discussion		
	2 <sup>nd</sup>	Doubt clear class		
	3 <sup>rd</sup>	Doubt clear class		
	4 <sup>th</sup>	Class Test		
14 <sup>th</sup>	1 <sup>st</sup>	Discussion about column		
	2 <sup>nd</sup>	Discussion Sample paper question		
	3 <sup>rd</sup>	question discussion for semester exam		
	4 <sup>th</sup>	question discussion for semester exam		



HOD



DEAN



PRINCIPAL