III Semester, B Sector

Department of Mechanical Engineering
NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI

MEPC12: Strength of Materials					
Course Code & Title	MEPC12 & Strength of Materials	No. of Credits	03	Course Type	Core
Department	Mechanical Engineering	Faculty Name & Contact Details	Dr. R. B. ANAND rbanand@nitt.edu, 9488890164		

COURSE OVERVIEW

This integrated course involves the basic understanding of fundamental engineering principles in-line with analysis of forces and the effects of forces on the engineering components. The course famililiarises the students with the vast areas of applciations of engineering mechanicsm, types of mechanical stresses and strains, elastic coefficients of materials and design of any physical system in a very precise and interesting manner and therby opens an a platform to design of mechanical components.

COURSE OBJECTIVE

1. To explain the importance of mechanics and fundamental concepts in the context of stress and strain calculations.
2. To explain the significance of centroid, centre of gravity and moment of inertia in-line with bending of beams, evaluation of deflection of beams, struts and columns.
3. To introduce the failure theories of design of mechanical components like shafts, springs and thin vessels.
4. To apply the different principles that connected with principal stresses and strain.

COURSE OUTCOMES (CO)

After taking this course students would be able to:	Aligned Programme Outcomes (PO)
Appreciate complexity of various design procedures that connected with mechanical components, materials selection, etc.	1, 2, 3, 5
Demonstrate the evaluation of stresses and strain in terms of simple bending and thin & thick vessels (cylindrical and spherical).	1, 2, 3, 5, 6, 8
Apply shear force and bending moment diagrams to analyze the resistance offered by the beam and able to solve practical problems in real world scenario	1, 2, 3, 5, 6, 8

COURSE ASSESSMENT METHODS

Sl. No.	Mode of Assessment	Week / Date	Duration	% Weightage
1.	Cycle Test - 1	After 6th week	75 Minutes	20
2.	Cycle Test – 2	After 11th week	75 Minutes	20
3.	Surprise Test - 1	After 3rd week	30 Minutes	05
4.	Surprise Test - 2	After 9th week	30 Minutes	05

5.	Assignment + Overall Attendance Attendance Credit: For > 90 % = 2 marks For >80 % = 1 marks	Nil.	-----	05
6.	End Examination	----	150 Minutes	45

Textbooks, reference books, website addresses, journals, etc.

1. Sadhu Singh, Strength of Materials, Pub.: Khanna Publishers.
2. Prasad, I. B., A Text Book of Strength of Materials, Pub.: Khanna Publishers
3. Timoshenko, S. Elements of Strength of Materials, Pub.: East West Press.
4. Lehri, A. S. and Lehri, R. S. Lehri, Strength of Materials, Pub.: S. K. Kataria & Sons.
5. Nash, W. A., Strength of Materials, Schaum's Outlines (Adapted by Nilanjan Mallick), Pub.: McGraw Hill.

COURSE EXIT SURVEY

1. Feedback from the students during class committee meeting.
2. End semester feedback on Course Outcomes.

COURSE POLICY (Attendance, Assessment, academic honesty, etc.)

CORRESPONDENCE

All the correspondence (schedule of classes/schedule of assessment/ course material/ any other information regarding this course) will be done through their class representative.

ATTENDANCE

1. Attendance will be taken by the faculty in all contact hours. Students not having 75 % attendance at the end of the semester and also fail in CPA (scoring less than 50 %) will have to REDO the course.

2. Any student, who fails to maintain 75 % attendance and achieved more than 65 % attendance need to appear for the compensation assessment and classes.

ASSESSMENT

1. If any student is not able to attend any of the Continuous Assessments (CAs: 1 - 6) due to genuine reason, student is permitted to attend the Compensation Assessment (CPA) with % weightage equal to maximum of the CAs. However, the maximum of % weightage among the assessments for which the student was absent will be considered for computing marks for CA. (This is not valid for students who have attendance lag. Refer Pt. 2 under attendance). At any case, CPA will not be considered as an improvement test.

2. Students are expected to score minimum 50 % of the maximum mark of the class in the CAs to attend the end semester examination in addition to the attendance requirement.

3. Every student is expected to score minimum 35 % of the total assessment (1, 2, 3, 4, 5, and 6) to pass the course. Otherwise the student would be declared as fail and F grade will be awarded.

ACADEMIC HONESTY & PLAGIARISM

1. All the students are expected to be genuine during the course work. Taking of information by means of copying simulations, assignments, looking or attempting to look at another students paper or bringing and using study material in any form for copying during any assessments is considered dishonest.

2. Tendering of information such as giving one's program, simulation work, assignments to another student to use or copy is also considered dishonest.

3. Preventing or hampering other students from pursing their academic activities is also considered as academic dishonesty.

The Course Coordinator is available for consultation at the coordinator's office and queries may also be emailed to the Course Coordinator directly at **rbanand@nitt.edu**

FOR SENATE'S CONSIDERATION

Course Faculty _____ CC-Chairperson _____ HOD _____

(Dr. R. B. Anand)
Prof / Mechanical Mfg. Dept.

Dr. ANK

5/9/18

HEAD
Department of Mechanical Engg.
National Institute of Technology
Tiruchirappalli - 620 015.