South Plains College
Mathematics, Engineering, & Computer Science Department
Mechanics of Materials (Solids) – ENGR 2332.601
Tuesday & Thursday: 4:00pm – 5:45pm
Course Syllabus - Fall 2025

Instructor: Jake Wyatt, PE, SE
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Office Hours (Levelland Campus): M & W: 3-4:30, F: 9-12, and by appointment.
Office Hours (Lubbock Campus): T & R: 6-7pm, and by appointment.

Course Description: Solids is the theory of stress and strain in elastic and inelastic bodies subject to various conditions of loading.

Credit: 3 Semester Credit Hours

Prerequisites: ENGR 2301 ("C" or better in Statics)

Textbook: Mechanics of Materials (11 ed.) by R.C. Hibbeler

Attendance: Attendance and effort are important for success in this course. Class attendance may be taken at any time during the class period, so please do not arrive late or leave early.

Class Format: 4:00 – 4:30pm   HW Questions from Students
                     4:30 – 5:15pm   Lecture
                     5:15 – 5:20pm   Break
                     5:20 – 5:45pm   Lab Assignment

Lab Assignments: Lab assignments (labs) are short worksheets to be completed in class. The lab consists of problems related to the lecture. If the lab cannot be completed by 5:45pm, then an extension without penalty will be granted. However, if a student leaves early before completing the lab, no extension will be granted and he or she must turn in the incomplete lab before leaving. Make-up labs are only permitted in the case of an excused absence. Group work is encouraged during labs.

Homework: Homework will be assigned at each class meeting but will not be graded until exam day.
                     Format for all homework assignments:
                     1. Provide a "Given" and "Find" problem statement on your own paper.
                     2. Provide a solution showing all the necessary work.
                     3. Clearly mark your final answer.
                     4. Check your answer with the answer key to make certain you are practicing correctly.

Notebook: You are required to maintain a 3-ring binder with four dividers, labeled: Notes, Homework, Lab Assignments, & Exams. Your notebook will be collected on exam days and will be graded for completeness and neatness.

Supplementary Information: The course syllabus, schedule, and grades can be accessed through Blackboard, the online course management system for this course. Please email questions regarding Blackboard support to blackboard@southplainscollege.edu.

Grading: Notebook: 10%
                 Lab Assignments: 10%
                 3 Exams: 20% each
                 Final Exam: 20%
Note: Your lowest exam score will be replaced with your final exam score, provided the latter is higher.
Your final average in the course will determine the letter grade posted on your transcript. This grade is determined by the following scale. A(90-100%), B(80-89%), C(70-79%), D(60-69%), F(0-59%).

Calculators: A non-graphing calculator may be used in this course as needed. The TI-30XIIS is a good option. Computers and cell phones are prohibited.

Mechanics of Materials (Solids) Course Outline
ENGR 2332.601 (TR 4:00 – 5:45pm)
Fall 2025

Week	Date	Required Reading & Lecture Topic	Homework Assignment
1	Aug 26 – T	1.1 - 1.2 Equilibrium of a Deformable Body	1-1, 1-5, 1-10
	Aug 28 – R	1.3 – 1.5 Stress, Average Normal Stress, Average Shear Stress	1-31, 1-38, 1-42
2	Sep 1 - M	*Labor Day Holiday – no office hours*	
	Sep 2 – T	1.6 – 1.7 Allowable Stress Design, Limit State Design	1-70, 1-77, 1-79
	Sep 4 – R	2.1 – 2.2 Deformation & Strain	2-2, 2-5, 2-15
3	Sep 9 – T	3.1 – 3.4 Stress-Strain Relationships	3-1, 3-14, 3-21
	Sep 11 – R	3.5 – 3.6 Poisson's Ratio	3-25, 3-29, 3-33
4	Sep 16 – T	**Exam 1 (20%)**	
	Sep 18 – R	4.1 – 4.2 Saint-Venant's Principle & Axially Loaded Members	4-1, 4-7, 4-13
5	Sep 23 – T	4.6 – 4.7 Thermal Stress & Stress Concentrations	4-69, 4-70, 4-93, 4-94
	Sep 25 – R	5.1 – 5.4 Torsion	5-5, 5-11, 5-58
6	Sep 30 – T	6.1 – 6.2 Load as Function of Position, Shear & Moment Diagrams	6-2, 6-5, 6-13
	Oct 2 – R	6.3 – 6.4 Bending Deformation, Flexure Formula	6-47, 6-53, 6-73
7	Oct 7 – T	6.6 Composite Beams	6-121, 6-122, 6-124
	Oct 9 – R	6.7 Reinforced Concrete Beams	6-127
8	Oct 14 – T	**Exam 2 (20%)**	
	Oct 16 – R	7.1 – 7.2 The Shear Formula	7-1, 7-2, 7-3
	Oct 17 - F	*SPC Fall Break – no office hours*	
9	Oct 21 – T	7.3 Shear Flow in Built-Up Members	7-33, 7-34, 7-35, 7-46
	Oct 23 – R	8.1 – 8.2 Combined Loadings	8-18, 8-26, 8-27
10	Oct 28 – T	4.4 – 4.5 Indeterminate Axially Loaded Members & The Force Method	4-31, 4-39
	Oct 30 – R	5.5 Indeterminate Torque-Loaded Members	5-77, 5-78, 5-79
11	Nov 4 – T	9.1 – 9.3 Stress Transformation	9-1, 9-2
	Nov 6 – R	10.1 – 10.2 Strain Transformation	10-2, 10-3
	Nov 7 - F	*Registration Opens for Spring*	
12	Nov 11 – T	**Exam 3 (20%)**	
	Nov 13 – R	11.1 – 11.3 Beam Design	11-1, 11-5, 11-10
13	Nov 18 – T	13.1 – 13.3 Column Design	13-2, 13-3, 13-10
	Nov 20 – R	12.1 – 12.2 Elastic Curve, Slope & Displacement by Integration	12-5, 12-9
14	Nov 25 – T	12.5 Method of Superposition	12-83, 12-85, 12-86
	Nov 27 – R	*Thanksgiving Holiday – No Class*	
15	Dec 2 – T	12.6 – 12.7 Statically Indeterminate Beams & Shafts	12-99, 12-102
	Dec 4 – R	Review for Final Exam	
16	Dec 9 – T 5:00–7:00 pm	**Final Exam (20%)**	

Note: The instructor reserves the right to modify the course syllabus and schedule, as well as notify students of any changes, at any point during the semester.