

3. Utilize extensometer and strain gauge in stress/strain analysis.
4. Utilize data acquisition hardware/software for mechanical testing.
5. Prepare accurate and effective technical laboratory reports.

COURSE REQUIREMENTS:

1. **Attendance:** Students are expected to attend class to perform the experiments. Advance notice of an absence should be provided whenever possible. Makeup exams, quizzes, and acceptance of late assignments will be considered only for documented medical reasons, emergency circumstances, or other university sponsored activities.
2. **Laboratory Report:** Laboratory report formats will be distributed in the class that must be followed. Laboratory reports must be submitted in the next class following the class in which the experiment is performed or any other assigned date by the instructor. Laboratory safety procedures must be followed and failure to do so may result in disciplinary action and a failing grade. Informational questions and design problems may be included. Late report WILL NOT be accepted. Exceptions may be considered in case of illness, serious emergencies, or other university sponsored activities. However, appropriate evidence must be presented in order to qualify for exceptions. All reports must be typed in 1.5 or double space, printed and submitted on 8½"x11" white paper. NO hand-written report will be accepted. Graded lab reports will be returned to students; however, students need to preserve them until the grades are finalized and show them to the instructor if there is any dispute in grades.
3. **Laboratory Notebook:** Each student will keep a record of data in a standard laboratory notebook. Notes must be made with a pen and must be made during the laboratory (i.e. not copied a day after you leave). Notes should never be erased. If a mistake is made, cross out the error. Never tear pages out of your laboratory notebook. Although neatness is important, it is not the most important aspect of collecting data since it is sometimes impossible to write neatly when actively performing an experiment. The following information should be included in your laboratory notebook for each laboratory topic:
 - (1) Date
 - (2) Your name and your partner's name
 - (3) Title of topic/Name of the Experiment
 - (4) The collected data/Data sheet
 - (5) Comments and observations

Data are items of information necessary to identify and analyze the case under investigation. Data could be as simple as a drawing of the experimental setup or a list of collected measurements. To understand why a certain item of information needs to be recorded, you need to have a thorough understanding of the problem you are trying to study. Therefore, read about the method BEFORE coming to the lab. There are many items of information, the importance of which may not be too clear to you until it comes time to analyze the data. A good example may be temperature. While your primary concern in the lab will be to collect measurements, you should not forget to measure and record the not-so-obviously-needed items of information.

Make sure you have measured and recorded all the information you need before turning off a machine or leaving the lab. In most cases, once you leave the lab, you may not be able to go back and determine something you should have determined while the test was being conducted. Finally, examine and understand the range and accuracy of the instruments you are using to collect the data. If a lab partner reads a weight of 1.0035 g from an instrument that only reads to 1/1000 g, your partner is making a mistake. Check the data yourself, and always question data that seems unreasonable. **Laboratory notebook needs to be signed by the instructor in-charge before you leave the lab. Laboratory notebook needs to be submitted to the instructor to get the 5% points as assigned in the grading policy.**

4. **Exams/Quizzes:** All exams/quizzes are closed books and notes unless advised otherwise. NO make-up exams/quizzes will be given. Exceptions may be considered in case of illness, serious emergencies, or other university sponsored activities. However, appropriate evidence must be presented in order to qualify for exceptions. Graded exams/quizzes will be returned to students; however, students need to preserve them until the grades are finalized and show them to the instructor if there is any dispute in grades.
5. **Cheating:** Cheating on assignment/experiment data generation and particularly on the examinations will not be tolerated. If you are caught cheating, you will get zero on the exam. You will be asked to move if you are caught looking at another student's work. The instructor reserves the right to remove any student from the class if the student's behavior is of a disruptive nature or if there is an evidence of academic dishonesty.
6. **Class Decorum:** No cell phone use, eating, and/or multitasking are allowed during the class. For emergency, cell phone can be operated in vibration mode; however, students can receive an emergency call only stepping out of the class room. No feet on the table and/or on the nearby chair are allowed during the class/lab.
7. **Honor Code:** SPSU has an Honor Code and a procedure for handling cases when academic misconduct is alleged. All students should be aware of them. Information about the Honor Code and the misconduct procedure may be found at <http://www.spsu.edu/honorcode/>.
8. **ADA Provisions:** "Students with disabilities, as defined by the Americans with Disabilities Act (ADA) of 1990, should contact the instructor during the first week of the semester regarding the accommodations necessary to complete the requirements of this course. The instructor will make reasonable adjustments to take into consideration the specific handicap of each student covered under the ADA. The students can also contact SPSU ADA coordinator at 678-915-7244 for additional help."

GRADING POLICY: All exams, quizzes, and assignments must be completed satisfactorily in order to pass the course. The evaluation process described below is subject to change by the instructor. Changes will be announced in the class.

Class Work:

- | | |
|-----------------|-------|
| 1. Lab Reports | - 50% |
| 2. Lab Notebook | - 05% |

Total Grade:

<u>Scale, Letter Grade, and GPA</u>			
90%	-	100%	A 4.0 (Excellent)

2. Quiz/Exam 1	- 20%	80%	-	90%	B	3.0 (Good)
3. Final Quiz/Exam (Comprehensive)	- 25%	70%	-	80%	C	2.0 (Satisfactory)
		60%	-	70%	D	1.0 (Passing)
			<	60%	F	0.0 (Failure)
TOTAL	- 100%	--		--	WF	0.0 (Withdrawn after deadline)

The following symbols are approved for use in the cases indicated, but will not be included in the determination of the grade point average.

"I" This symbol indicates that the student was doing satisfactory work but, for non-academic reasons beyond his control, was unable to meet the full requirements of the course. The requirements for removal of an "I" are left to the respective institutions; however, if an "I" is not satisfactorily removed after three quarters of residence, the symbol "I" will be changed to the grade "F" by the appropriate official. (See Southern Tech policy - Removal of an Incomplete "I", on page 2).

"W" This symbol indicates that a student was permitted to withdraw without penalty. Withdrawals without penalty will not be permitted after the mid-point of the total grading period (including final examinations) except in cases of hardship as determined by the appropriate official of the respective institution.

"V" This symbol indicates that a student was given permission to audit this course. Students may not transfer from audit to credit status or vice versa.

"K" This symbol indicates that a student was given credit for the course via a credit by examination program approved by the respective institution's faculty (CLEP, AP, Proficiency, etc.)

SCHEDULE: 1-150 minutes class per week

TENTATIVE LECTURE TOPIC/OUTLINE: The following topics/experiments are subject to change by the instructor. Changes will be announced in the class.

Class/Week	Name of the Topic/Experiment	Comments
Week 1 (08/21)	Orientation and laboratory safety	---
Week 2 (08/28)	Experiment No. 1: Tensile Test on Connection	Handouts/Book
Week 3 (09/04)	No Lab	---
Week 4 (09/11)	Experiment No. 2: Strain Gauges and Poisson's Ratio Test	Handouts/Book
Week 5 (09/18)	No Lab	---
Week 6 (09/25)	Experiment No. 3: Axial Tensile Test	Handouts/Book
Week 7 (10/02)	Experiment No. 4: Torsion Test	Handouts/Book

Class/Week	Name of the Topic/Experiment	Comments
Week 8 (10/09)	Midterm Exam/Quiz 1	---
Week 9 (10/16)	Experiment No. 5: Pressure Vessel Test	Handouts/Book
Week 10 (10/23)	Experiment No. 6: Fatigue Test	Handouts/Book
Week 11 (10/30)	No Lab	---
Week 12 (11/06)	Experiment No. 7: Beam Bending and Deflection Test	Handouts/Book
Week 13 (11/13)	Experiment No. 8: Column Buckling Test	Handouts/Book
Week 14 (11/20)	No Lab	---
Week 15 (11/27)	Final Exam/Quiz - Comprehensive	---

ABET CATEGORY: Engineering science: 3 credit hours (100%)