ENGR 0135 Sec 1 **– Statics and Mechanics of Materials I**

Spring of 2026

Classroom:	S-501	Office:	N-504
Office Hours:	F 1~4 pm	Email:	jin.xu@scupi.cn

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Catalog Description:

This 3-credit course discusses about forces in plane and space, equilibrium of particles and equilibrium of rigid body, and analysis of structure for truss and frame problems. Prerequisite: *PHYS 0174 and MATH 0230*.

Course Outcomes:

Upon completion of this course, students will be able to:

- Develop a basic knowledge of equilibrium of particles and rigid bodies under the action of external forces;
- Simplify 2D force-and-couple systems in static equilibrium, including reduction of a distributed loading, and determine the reaction forces and couples;
- Analyze plane trusses in static equilibrium, and determine reaction and internal forces;
- Analyze beams in static equilibrium, and determine internal forces and moments;
- Develop an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics;
- Develop an ability to function effectively on a team whose members together provide leadership, create a collaborative environment, establish goals, plan tasks, and meet objectives;
- Develop an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Required Textbook:

Riley, Sturges, and Morris, *Statics and Mechanics of Materials: An Integrated Approach* (2nd Ed.), Wiley.

Course Policies:

Regular class attendance is expected. If a student routinely misses class or is tardy to class, grade reduction will occur. Moreover, three unexcused absences will result in 70 as the best possible grade for this course. Each student is responsible for all the material presented in class and in the reading assignments. Exams will emphasize treatment of material covered in lectures. In general, no late assignments will be accepted, nor makeup exams given. Exceptions will be made for a valid excuse consistent with University Policy. If you cannot attend an exam or meet a due date, you must contact the instructor prior to the exam or due date. (Failure to do so will result in a zero on that exam/assignment.) Arrangements will be made for students on a case-by-case basis.

Integrity and Academic Expectations:

"Violations of academic integrity include, but are not limited to, cheating, plagiarism, or misrepresentation in oral or written form. Such violations will be dealt with severely, in accordance with

University policy. Plagiarism means representing someone else's idea or writing as if it were your own. If you use someone else's ideas or writing, be sure the source is clearly designated."

Grading Policy:

Midterm = 35%, Final = 35%, Homework/Quiz = 20%, and Lab/Project = 10%. The official SCU grading scale will be used when determining your final letter grade (based on the numerical grade).

90~100 = A	80~85 = B+	70~73 = C+	60~63 = D
85~ 90 = A-	76~80 = B	66~70 = C	< 60 = F
	73~76 = B-	63~66 = C-	

Course Schedule:

Week	Topics
1	Overview & Vector Addition
2	Equilibrium of a Particle
3	Moments
4	Force-Couple Systems
5	Force-Couple Systems
6	Equilibrium of a Body
7	Equilibrium of a Body
8	Review and Lab
9	Midterm
10	Truss
11	Method of Joints
12	Method of Sections
13	Frames
14	Beams
15	Beam Analysis
16	Review and Lab
17	Final