Semester	Spring 2023

Course Number	ENGR 0135
Course Title	Statics & Mechanics of Material 1

Instructor	Ping C. Sui, Ph.D.
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Teaching Assistant	Mr. Shuhan Miao
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Office Hours	Wednesday 1:00-5:00PM
	Thursday 1:00-5:00PM
Lecture Time	Thursday 8:15-11:00AM
Lecture Room	Zone 3-103

Prerequisites	MATH 0230 Analytic Geometry & Calculus 2
	PHYS 0174 Basic Physics for Science & Engr. 1

Textbook	W. F. Riley, L. D. Sturges, and D. H. Morris: Statics and Mechanics of Materials: An Integrated Approach. 2nd Edition. John Wiley & Sons, Inc.

Course Description	This course is a 3 credit hour class. It provides an introduction to the mechanics of materials and structures by covering two major subjects in Mechanical Engineering: Statics and Mechanics of Materials. For statics, the course will discuss about forces in plane and space, equilibrium of particles and equilibrium of rigid body and analysis of structure for truss problem. For Mechanics of Materials, the concept of stress, the axial load, torsion load, bending load and combine load will be covered. Finally, the mechanical design of a system will also be discussed to help students to develop the logical thinking in handling the real problem in mechanics.

Course Outcome	It is expected that the students will learn to develop an understanding of static equilibrium and stresses in statically-determinate structures and how to apply them to engineering systems; learn a systematic approach to problem solving; and foster effective mathematical and graphical communication skills.
	While there will be a chance for students to apply their mathematical skills in this subject, the emphasis is on the physical understanding of why a material or structure behaves the way it does in the engineering design.

Class Calendar

Session	Class Date	Chapter	Topic	Assignment
1	Feb 23		LN00 Course Overview	
2	Mar 02	Ch. 01	LN01 Introduction, Basic Concepts, Newton's Law Units, Dimensions, Significant Figures	HW01
3	Mar 09	Ch. 02	LN02A Review Vector/Dot Product LN02 Concurrent Force Systems	HW02
4	Mar 16	Ch. 03	LN02B Concurrent Force Systems LN03 Equilibrium of Concurrent Force Systems	HW03

5	Mar 23	Ch. 4.1 ~ Ch. 4.5	Stress and Strain under Axial Loading Stress-Strain Diagram and Hooke's Law	HW04
6	Mar 30	Ch. 4.6 ~ Ch. 4.11	Thermal Effect Deformation under Axial Loading	HW05
7	**Apr 06**	**Sec Exam 01**		
8	Apr 13	Ch. 5.1 ~ Ch. 5.5	Moments and Couples	HW06
9	Apr 20	Ch. 5.6 ~ Ch. 5.8	Equivalent Force-Moment Systems Centroids, Center of Mass, and Distributed Loads	HW07
10	Apr 27	Ch. 5.9 – 5.11	Centroids of Composite Bodies Distributed Loads on Structural Members	HW08
11	May 04	Ch. 6.1 ~ Ch. 6.3	Free-Body Diagrams Equilibrium in Two Dimensional Systems	HW09
12	**May 11**	**Sec Exam 2**		
13	May 18	Ch. 6.4 ~ Ch. 6.5	Frame &Machines Statically Indeterminate Problems	HW10
14	May 25	Ch. 6.6 – 6.9	Plane Truss Equilibrium in 3D and Friction	HW11
15	Jun 01	Ch. 7.1 ~ Ch. 7.4	Torsion I	HW12
16	Jun 08	Ch. 7.5 ~ Ch. 7.8	Torsion II	HW13
17	Jun 15	Ch. 7.5 ~ Ch. 7.8	Torsion II	HW14
18	**Jun 22**	**Sec Exam 03**		

In-Class Practices	Hands-on calculation practices will be given during the class throughout the semester. Purpose is to promote in-class discussions and keep students in-sync with course material during lecturing.
Homework	Problem sets will be distributed each week after the class. Each problem set is designed to build upon the material covered in the preceding lectures and recitations. Homework assigned in a particular class is due at 8:15 AM on the day of the next class period, unless otherwise posted. Late HW will not be accepted.
Section Exams	There will be three section exams. The final exam is comprehensive. The exams in this course will be closed book and closed note. No make-up will be given for the missing exam. Exams missed due to unpredictable events will be dealt with on a case-by-case basis.
Exam Calculator	Bring your own engineering calculator to tests is necessary. Cell phone calculator is not adequate. However, no programmable calculator of any kind will be allowed during eams.
Grades	In-Class Practices: 14% Homework 20% Section Exams: 66%

附件：等级成绩和百分成绩、绩点对照表

字母等级	A	A-	B+	B	B-	C+	C	C-	D+	D	F
中文等级	优秀		良好		中等		合格				不合格
百分制	100~90	89~85	84~80	79~76	75~73	72~70	69~66	65~63	62~61	60	<60
绩点	4	3.7	3.3	3	2.7	2.3	2	1.7	1.3	1	0

Class Attendance	Students are expected to attend every class period. Early is on time, on time is late. As a courtesy to your fellow classmates, be punctual and arrive no later than the class starting time.
Academic Honesty	All of us are equally responsible for ensuring a fair and positive learning environment. Students are permitted to discuss homework assignments together, but should do their own work when preparing a problem solution. All exams are to be completed without unauthorized assistance. Any student caught cheating on an assignment or exam will receive disciplinary action, including receiving a grade of "F" for the course.