

COURSE SYLLABUS

ENGR 2301 STATICS

COURSE INFORMATION

Credit Hours: 3

Pre-requisite: PHYS 1710, PHYS 1730

Term: Summer 2020

Time

Lecture: (M-W) 8:30 am -10:20 am

Classroom

NA

INSTRUCTOR INFORMATION

Name: Saman Rashidyan, Ph.D., PMP

Office: Discovery Park F115V

Office Hours: (M-W) 11:30-12:30 pm or by appointment

Phone: (940) 369-5263

Email: Saman.Rashidyan@unt.edu

COURSE DESCRIPTION

Basic theory of engineering mechanics, using calculus, involving the description of forces, moments and couples acting on stationary engineering structures. Equilibrium in 2 and 3 dimensions, free-body diagrams, friction, centroids, centers of gravity and moments of inertia.

COURSE OBJECTIVES

By the end of the course, you will be able to:

1. Understand the basic principles that govern the equilibrium of bodies under the actions of forces. (Abet 1)
2. Apply the knowledge and tools of statics to solve engineering mechanics problems. (Abet 1)
3. Manipulate vector operators and apply them to particles and rigid bodies. (Abet 1)
4. Draw free-body diagrams of particles and rigid bodies. (Abet 1)
5. Calculate the moment of force about a specified point or line. (Abet 1)
6. Determine the forces in the members of simple structures (trusses, frames and machines). (Abet 1)
7. Determine internal forces developed in structures. (Abet 1)
8. Characterize the friction in equilibrium of rigid bodies. (Abet 1)
9. Determine the location of center of gravity and centroid for a system of discrete particles and for objects of arbitrary shape. (Abet 1)
10. Understand basic calculations of the moment of inertia for an area. (Abet 1)

STUDENT LEARNING OUTCOME

An ability to apply knowledge, techniques, skills and modern tools of mathematics, science, engineering, and technology to solve broadly-defined engineering problems appropriate to the discipline. (Abet 1)

MATERIALS

Required Textbook

Engineering Mechanics: Statics, Modeling and Analyzing Systems in Equilibrium by Sheri D. Sheppard, Thalia Anagnos, and Sarah L. Billington, Wiley. With Wileyplus registration: ISBN-13: 978-1119344087

Course outline is based on this textbook.

If you do not want to buy a hardcopy of the book, you can get an electronic copy of the book by buying the WileyPLUS stand alone.

TENTATIVE COURSE OUTLINE

The course outline may be subjected to modifications.

Week	Topic	Book Chapter
1	Introduction - Forces	1, 2
2	Forces - Moments	2, 3
3	Moments	3
4	Modeling Systems with Free Body Diagrams, Exam #1 (Jun 24)	4
5	Modeling Systems with Free Body Diagrams, Mechanical Equilibrium	4, 5
6	Mechanical Equilibrium, Distributed Forces	5, 6
7	Distributed Forces - Friction	6, 7
8	Trusses - Exam #2 (Jul 22)	8
9	Trusses - Frames	8, 9
10	Frames - Final Exam (Aug 7) 8:00 a.m.	9

COURSE REQUIREMENTS

Exams

Exams will be based on textbook, class exercises, homework, class lectures and class discussions. Students are responsible for all text material, regardless of whether we review the text material in class or not.

Missed Exams: You will be allowed to make up missed exams only if you have a documented university excused absence. Make-up exams may not be the same as the original.

Homework

Homework is due one week, unless otherwise noted.

Late Homework: Homework cannot be accepted late as it is controlled by the software.

GRADING

Attendance/Participation	5
Class assignments, and announced/unannounced quizzes	15
Homework	15
Exam #1	20
Exam #2	20
Final Exam	25
Total	100

GRADE DISTRIBUTION

90 – 100 and higher	A
80-89	B
70-79	C
60-69	D
Below 60	F

DISABILITIES ACCOMMODATION

Any accommodations for differing abilities will be made for this course as per the policies and determination of the Office of Disability Accommodation: <http://disability.unt.edu/>

ADDITIONAL POLICIES

- Please mute your microphone during the class.