Department of Engineering, De Anza College

ENGR 35. Statics (Spring 2017)

Instructor	Sathish Manickam, Ph.D.
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Schedule	MW 06.30-09.10 PM, Room: S75
Office Hours	30 Minutes before and after class (S75) and/or by appointment.
Course Materials	My Portal / Course Studio

Administrative Announcements

- 4 Units

- Hours: 2.5 lecture, 2.5 hours laboratory (55 hours total per quarter).

- General Education Status: Non-GE

- Program Status: Program Applicable

- Credit Status: Credit - Degree applicable

- Grading Method: Letter Grade

- Prerequisites: Engineering 10; Mathematics 1B; Physics 4A.

Course Description (From Schedule of Classes)

Principles of statics as applied to particles and rigid bodies in two and three dimensions. Vector solutions for concentrated and distributed loads. Determination of centroids and moments of inertia and the effects of dry friction. Programming computer solutions.

Text

F.P. Beer, E.R. Johnston, Vector mechanics for engineers: Statics, 10ed., McGraw-Hill, 2012.

Alternate Texts

1. 7th, 8th or the 9th edition of Beer and Johnston's text cited above (or older versions of the books listed below). Library carries many copies of these books.

2. R.C. Hibbeler, Engineering Mechanics: Statics, 13th Edition, Prentice Hall, 2012.

3. J.L. Meriam and L.G. Kraige, Engineering mechanics: Statics, 7th Edition, John Wiley, 2012.

4. E.W. Nelson, C.L. Best and W.G. McLean, Schaum's Outline of Theory and Problems in Engineering Mechanics: Statics and Dynamics, 1997.

5. S. Timoshenko and D.H. Young, Engineering Mechanics, McGraw-Hill, 1954.

If you wish to follow any other book of similar content, please talk to me first.

Academic Integrity

Please note that if you were found cheating in exams, quizzes or homework, you will automatically receive zero points for that entire exam/homework/quiz, and that you will be reported to the Department. You will not be eligible for any makeup for the entire exam/homework/quiz. De Anza's Policy on Academic Integrity will be strictly followed. Policy statement:
http://www.deanza.edu/studenthandbook/academic-integrity.html.

Campus Policy on Disability

Class specific things may be obtained by contacting me or the department office. For campus wide resources, students may contact Disability Support Services (DSS) *http://www.deanza.edu/dss/index.html.*

Student Learning Outcome (SLO)

1. The student will be able to analyze two- and three-dimensional force systems on rigid bodies in static equilibrium using vector and scalar analysis methods.

Course Learning Objectives

1. Understand the basic principles of statics.

2. Identify concurrent force systems in 2-D and 3-D space.

3. Apply the principles of statics for a particle in space.

4. Determine equivalent force/moment systems.

5. Calculate the centroids and center of gravity.

6. Apply the principles of statics for studying equilibrium of rigid bodies.

7. Recognize trusses, frames, and machines.

8. Determine the frictional forces in statics.

9. Learn the use of virtual work for the analysis of statics of particles and rigid bodies.

Grading Policy

Homework (2×8)-16%, Project- 8%, Quizzes (2×8)-16%, Midterms (2×20)-40%, and Finals-20%.

A (90.0-100.0)	A- (89.9-85.0)	B+ (84.9 - 80.0)	B (79.9-75.0)	B- (74.9-70.0)
C+ (69.9 - 65.0)	C (64.9-60.0)	C-(59.9 - 55.0)	D (54.9-50.0)	F <50

Other Useful Information

1. No cell phones during class. Keep it on mute. Check only if necessary.

2. If you are using ebooks (and devices), please use only those that are relevant to the class.

3. This course is highly interactive. To be successful, you *must* to read ahead, attend all classes, actively participate in discussions in class and work on the assignments and projects.

4. From the College's webpage: *"De Anza offers a broad range of programs and services to help you succeed. Through peer advising, student mentoring, tutoring and more, we provide the support that you need to reach your educational goals."* Make use of the opportunities available to you. For details, please see: *http://www.deanza.edu/academicsupport/*

5. Emails from students are always welcome. I will return your emails within 24 hours.

6. There will be a total of eight quizzes offered during the Quarter. All of them will be at the beginning of class. There will be no makeup offered for quizzes under any circumstances.

7. There will be two midterms offered for the class. Makeups for midterms are offered only if there is a documented emergency need (or if arranged at least one week prior to the midterm).

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Course Calendar (Tentative)

Week	Date	Topic	Read	Due
01	04/10	Course info. Introduction, Statics of Particles	001-074	Q - 0
	04/12	Vectors, Parallelogram Law, Vector Resolution	001-074	
02	04/17	Forces in Space, Rigid Bodies, Moments	046-085	Q-1/HW-1
	04/19	Vector products, Couples	085-157	
03	04/24	Equilibrium of Rigid Bodies - 2D	158-191	Q-2/HW-2
	04/26	Equilibrium of Rigid Bodies - 3D	192-217	
04	05/01	Distributed Forces - Areas and Lines	218-258	Q-3/HW-3
	05/03	Distributed Forces - Volumes	258-281	
05	05/08	Midterm Review	001-281	Q-4/HW-4
	05/10	**(Midterm -1, 1 hr)**, Trusses	282-314	
06	05/15	Trusses	282-314	
	05/17	Frames and Machines	314-351	
07	05/22	Forces in Beams	352-383	Q-5/HW-5
	05/24	Forces in Cables	383-410	
08	05/29	**MEMORIAL DAY**		
	05/31	Friction / Project	411-467	Q-6/HW-6
09	06/05	Friction	411-467	
	06/07	Moments of Inertia - Areas	468-510	Q-7/HW-7
10	06/12	Moments of Inertia - Mass	510-554	
	06/14	Midterm Review	282-554	
11	06/19	**(Midterm - 2, 1 hr)**, Virtual Work	556-598	
	06/21	Finals Review / Project submission	001-598	Q-8/HW-8
12	06/28	Final Exam (18.15-20.15 Hrs)		

Notes:

1. Reading assignments of the pages listed are from the course text. Read them before the class!

2. Quizzes each week will be based on the material covered in class during the previous week.

3. If you are using an alternate text, follow the topic descriptions shown and follow along.

4. Course schedule is subject to change with fair notice in class or via email.

5. Follow announcements, download homework and quiz solutions and discussions on Course-Studio.