

**ECE-210 – Statics
Summer 2006**

Statics: line # 65194
7:40–9:20 Daily SCOB 201

Professor: J. Rafael Pacheco

Office: ERC 373

Email: rpacheco@asu.edu

Office hours: Daily 9:20–12:00 p.m. or by appointment

Personal web Page: <http://math.la.asu.edu/~rpacheco>

Phone: (480)-965-8656

Prerequisite: MAT 270-271 (Calculus I and II) or equivalent; ECE 100 or PHY 121, 122.

Text: Bedford and Fowler, *Engineering mechanics: statics principles*, 3rd. edition. ISBN 0-13-008207-4, Prentice-Hall.

Optional reference: Beer and Johnston, *Engineering Mechanics–Statics*, 10th. edition, Prentice Hall.

Course meetings: Attendance at all class meetings in their entirety is expected. If you cannot attend due to illness or other obligations, I appreciate being notified by email or telephone. **All cell phones must be turned off before entering the class.**

Teaching Assistant: Yeshpal Gupta (ERC 522, email: yeshpal.gupta@asu.edu)

Test: (9 points). There will be approximately 5 in-class exams.

Homework: (1 point total). No make-up quizzes will be given and late homework will not be accepted.

Make-up exams: Make-up exams will not be given. Permission to take an exam at a time other than the schedule one will be granted at the discretion of the instructor. Arrangements must be made **before** the date of the test. Unexcused absences from exams will result in a grade of zero.

Grading and policies: Grades will be based on a combination of homework assignments and in-class exams, no comprehensive final examination, as follows: 5 midterms (total 9 points); homework (1 point).

Exam dates: There will be approximately five midterm examinations, to be administered in class on the following dates. The approximate syllabus is given in the right-hand column.

Tuesday, June 6	Chapters 1–4 (Force systems)
Tuesday, June 13	Chapters 5 (Equilibrium)
Monday, June 19	Chapters 6 (Structures)
Monday, June 26	Chapters 7, 10 (Distributed forces)
Friday, June 30	Chapters 8–9 (Friction)

About the course content: You are expected to read the assigned sections of the text before the next class period. Even if you do not understand the details, reading the book ahead of time will make the lectures and computer labs more understandable.

Suggestion for study: I encourage you to collaborate with other ECE 210 students, for example by forming a *study group* of members from class. ***Working on assigned problems and class attendance are essential to survival.***

I welcome your questions and your discussions outside of class, and hope that our work together will result in your developing both understanding and enthusiasm when it comes to Statics.

Notes: Deviations from the above and changes to the schedule below are at the discretion of the instructor.

Lec.	Date	Sec's	Topic	Assignment	Due date
1.	5/30	1.1–1.5	Introduction	# 1. Handout	6/1
1.	5/30	2.1–2.7	Vectors	# 2. 2 – 1, 2, 3, 4	6/1
1.	5/30	2.1–2.7	"	# 3. 2 – 12, 13, 15, 19	6/1
2.	5/31	3.1–3.4	Forces	# 4. 3 – 2, 4, 5, 7	
2.	5/31	3.1–3.4	"	# 5. 3 – 9, 13, 14, 15	
3.	6/1	4.1–4.6	Systems of forces and moments	# 6. 4 – 2, 3, 6, 9	
3.	6/1	4.1–4.6	"	# 7. 4 – 11, 14, 15, 16	
4.	6/2	4.1–4.6	"	# 8. 4 – 19, 22, 23, 24	
4.	6/2	4.1–4.6	"	# 9. 4 – 26, 27, 28, 29	
5.	6/5	4.1–4.6	"		
6.	6/6	1–4	Examination I		
7.	6/7	5.1–5.5	Objects in equilibrium	# 10. 5 – 1, 2, 3, 6	
8.	6/8	5.1–5.5	"	# 11. 5 – 7, 8, 9, 10	
9.	6/9	5.1–5.5	"	# 12. 5 – 4, 11, 12, 14	
10.	6/10	5.1–5.5	"	# 13. 5 – 15, 18, 19, 20	
11.	6/12	5.1–5.5	"		
12.	6/13	5	Examination II		
13.	6/14	6.1–6.5	Structures in equilibrium	# 14. 6 – 1, 2, 4, 5	
14.	6/15	6.1–6.5	"	# 15. 6 – 6, 7, 8, 10	
15.	6/16	6.1–6.5	"	# 16. 6 – 14, 16, 19, 24	
16.	6/19	6	Examination III		
17.	6/19	7.1–7.8	Centroids and centers of mass	# 17. 7 – 3, 4, 5, 6	
18.	6/20	7.1–7.8	"	# 18. 7 – 11, 17, 18, 19	
19.	6/21	10.1–10.5	Internal forces and moments	# 24. 10 – 3, 7, 10, 11	
18.	6/22	10.1–10.5	"	# 25. 10 – 14, 15, 17, 19	
19.	6/23	10.1–10.5	"		
20.	6/26	7 and 10	Examination IV		
21.	6/27	8.1–8.5	Moments of inertia	# 19. 8 – 3, 4, 6, 8	
21.	6/27	8.1–8.5	"	# 20. 8 – 13, 16, 19, 20	
21.	6/28	8.1–8.5	"	# 21. 8 – 22, 24, 25, 28	
22.	6/28	9.1–1.5	Friction	# 22. 9 – 2, 3, 8, 12	
22.	6/29	9.1–1.5	"	# 23. 9 – 18, 21, 24, 25	
23.	6/30	8–9	Examination V		

Homework format

A homework solution is essentially a short technical report. Follow the general rules listed for writing each “homework report”. Be neat and orderly, use proper grammar and English writing style, and present the homework so that an engineering professional, unfamiliar with the work, will be able to follow your presentation with relative ease. Provide written explanations as necessary and appropriate.

An important characteristic of a successful engineer is the ability to communicate effectively. Engineering technical communication utilizes English composition, mathematics, drawings, graphs, computer animation, etc. Homework is one way to continually improve your effectiveness in technical communication.

Ethical conduct is essential to assure the integrity of a profession – the Engineering Profession. If you obtain assistance from others in the process of doing your work, give those individuals appropriate credit in your report.

1. Use engineering computation paper
2. Use soft pencil lead and erases. Do not cross out material - erase it.
3. Work on one side of the paper only.
4. Start a new problem at the top of a new page.
5. Use basic drawing instruments (straight-edge, compass, protractor, etc.) for sketches of all types.
6. Spatially arrange and organize your work in a logical manner.
7. Indicate answers and sub-answers with an arrow at the RHS of paper.
8. Order and staple all pages of your homework report with a single staple in the upper left-hand corner.