CE 50 - Engineering Mechanics: Statics
Syllabus, Fall 2013

Course Information

Course CE 50 Engineering Mechanics: Statics
MWF   Section B (9-9:50AM), Fulton, Room 227
         Section C (10-10:50AM), Fulton, Room 227
         Section D (11-11:50AM), Fulton, Room 227

Instructor Dan Abbott, Lecturer, Ph.D. Graduate Student - Mechanical Engineering
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Office Hrs: MWF 1:00PM-2:30PM. Apart from these times, I keep an open door policy, so feel free to stop by and knock on my door when it's convenient or email me to set up an appointment. Email is the best method of communication apart from an individual meeting.

Text[1] R. C. Hibbeler, Engineering Mechanics: Statics, 13th ed., Prentice Hall, 2013.

Course Objectives At the end of this course, you should be able to:
1. Describe the defining characteristics of a vector and express a force or moment as a vector. Write and solve equilibrium equations for a particle. Replace a system of forces and moments with an equivalent representation.
2. Describe the differences between rigid body and particle static analysis. Derive and solve the equilibrium equations for a rigid body. Set up and solve truss problems as well as machine and frame problems.
3. Describe the relationship between shear forces and bending moments and determine the shear force and bending moment at any point within a rigid body. Write and solve the equilibrium equation problems involving friction. Determine the centroid of a rigid body and composite bodies by integration.
4. Describe the general approach to solving distributed loading problems and apply it to fluid pressure problems. Determine the moments of inertia for a rigid body by integration and composite bodies and explain the significance of principal moments of inertia.

Prerequisite Knowledge and Skills Phys 23 or 21, preceded or accompanied by Math 22 (Calc. III)

Policy & Procedures

Homework/Quizzes Make homework a priority. This will greatly improve your understanding of the material. Homework will be assigned, worked, and graded online through Pearson's MasteringEngineering platform (masteringengineering.com). You will be given assignments regularly in order to master the material. You should work problems by hand on paper as you go through an individual assignment as it may be randomly collected in lieu of online submission or random quizzes may be given. Homework must be submitted by the due date in order to receive credit. Late homework and quizzes cannot be made up. When you register under your section online you will need to enter the access code provided with your textbook and the following course ID:

MWF Sections B (9:00), C (10:00), D (11:00) - CE50BCDFS2013

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[1] There are multiple purchasing options. See instructor or check pearsonhighered.com, masteringenginering.com, or coursesmart.com

Exams Four common one-hour exams will be given as outlined in the syllabus. Note the following:
1. All exams are cumulative and may consist of multiple choice and short answer questions along with problems similar to those assigned as homework and discussed in class.
2. A formula sheet will be provided with the hour exams and the final exam.
3. Communication devices must be turned off and put away, and hats must be turned backwards.
4. Make-up exams are only given for off-campus university-sponsored activities (memo from your team coach or advisor is required) or for a certified medical excuse (verification must be provided) and will be dealt with on an individual basis. Job interviews, personal trips, etc. are not excusable, so plan accordingly.
5. An exam assigned zero credit without a verified excuse from the instructor may not be replaced by the final (see below).

Final A common final exam will be given at the end of the semester. The final exam:
1. Will be cumulative and may consist of multiple choice and short answer questions along with problems similar to those assigned as homework and discussed in class.
2. Can replace your lowest exam grade. If the final exam is your lowest score, it may not be replaced by a previous exam.

Grades Your semester grade will be calculated as follows:

Homework assignments and quizzes........................ 15%
4 Exams... 60%
Final... 25%

Letter grades will follow the scale 100-90% A, 89-80% B, 79-70% C, 69-60% D, <60% F. Keep in mind that grades are strictly performance based. Grades are not given or subjective. They are earned and adjusted based on an objective assessment of the work you submit.

Blackboard Access to lecture notes, slides, handouts, etc. will be available through Blackboard (blackboard.mst.edu). You can login with your SSO UserID and password.

Academic Dishonesty and FERPA Waiver A form concerning academic dishonesty and a limited waiver of FERPA is attached to the end of this syllabus and must be signed and returned within the first six class sessions in order to maintain enrollment in this course.

Academic Alert System The purpose of the Academic Alert System is to improve the overall academic success of students (academicalert.mst.edu).

Accommodating Special Needs and Classroom Egress Maps If you have a documented disability and anticipate needing accommodations in this course you are strongly encouraged to meet with the instructor early in the semester. You will need to request that the Disability Support Services (dss.mst.edu) staff send a letter verifying your disability and specifying the accommodations needed. All students should familiarize themselves with the campus classroom egress maps (registrar.mst.edu/links/egress).

Attendance Due to the nature of the course, your regular attendance is expected. Excessive absences may result in your being dropped from the course.

Note If you experience inadequate conflict resolution in this course that cannot be resolved by the instructor, feel free to consult with the department chairman, Dr. William Schonberg. His office is located in Butler-Carlton Hall, Room 211.

Date	Topic	Reading	Day	Textbook Exercises	Mec Movies
					http://web.mst.edu/~mecmovie/statics.htm
19-Aug	Introduction / Mastering Engr. / Vectors	2.1—2.6	1	2-,28,38,60,68,69	Mastering Engineering Intro
21-Aug	Vectors	2.7—2.9	2	2-91,113,128	Compute Resultant Force
23-Aug	Particle Equilibrium - 2D	3.1—3.3	3	3-7,9,15,28	
26-Aug	Particle Equilibrium - 3D	3.4	4	3-43,45,50,54	
28-Aug	Moment of Force - 2D/3D	4.1—4.4	5	4-5,17,20,26,29	
30-Aug	Moment of Force About Axis	4.5	6	4-34,39,40,47,51,53	
2-Sep	**Labor Day Holiday - NO CLASS**				
4-Sep	Couples / Equivalent Systems	4.6—4.8	7	4-68,70,91,101,104,112	
6-Sep	Distributed Loading	4.9	8	4-140,149,151,153	
9-Sep	Review		9		
11-Sep	**First Hour Exam**		10	**EVENING EXAM 5:00 - 6:30**	
13-Sep	Rigid Body Equilibrium - 2D	5.1—5.4	11	5-11,14,18,22	
16-Sep	Rigid Body Equilibrium - 2D	5.1—5.4	12	5-30,34,52,55	
18-Sep	Rigid Body Equilibrium - 3D	5.5—5.7	13	5-62,64,67,69	
20-Sep	Rigid Body Equilibrium - 3D	5.5—5.7	14	5-72,78,81,82	
23-Sep	Trusses	6.1—6.3	15	6-2,6,8,19	
25-Sep	Trusses	6.4	16	6-27,33,35,38	
27-Sep	Trusses	6.4	17	6-40,41,47,48	
30-Sep	Frames and Machines	6.6	18	6-61,64,67,72	
2-Oct	Frames and Machines	6.6	19	6-73,76,79,85	
4-Oct	Frames and Machines	6.6	20	6-91,97,102,104	
7-Oct	Review		21		
9-Oct	**Second Hour Exam**		22	**EVENING EXAM 5:00 - 6:30**	
11-Oct	Internal Forces	7.1	23	7-1,5,10,17,43	The Tree, Up Periscope
14-Oct	Shear & Bending Moment Equations	7.2	24	7-45,53,59	
16-Oct	Shear & Bending Moment Diagrams	7.3	25	7-71,72,73,79	6 Rules
18-Oct	Shear & Bending Moment Diagrams	7.3	26	7-84,85,92	Following the Rules
21-Oct	Dry Friction	8.1 & 8.2	27	8-5,7,15,17	
23-Oct	Dry Friction	8.1 & 8.2	28	8-25,34,49,53	
25-Oct	Wedges	8.3	29	8-59,61,63,65	
28-Oct	Belt Friction	8.5	30	8-84,88,93,99	
30-Oct	Centroids - Integration	9.1	31	9-3,10,28,35,39	
1-Nov	Centroids - Composites, P&G	9.2-9.3	32	9-55,58,64,79, 95,96	Centroids Game: Master
4-Nov	Review		33		
6-Nov	**Third Hour Exam**		34	**EVENING EXAM 5:00 - 6:30**	
8-Nov	Fluid Presure	9.4—9.5	35	9-120,122,123	
11-Nov	Fluid Pressure	9.4—9.5	36	9-124,125,128	
13-Nov	Fluid Pressure	9.4—9.5	37	9-129,130,139	
15-Nov	Area Moment of Inertia - Integration	10.1—10.2	38	10-3,4,19,20	
18-Nov	Area Mom. of Inertia - Composites	10.4	39	10-25,26,40,41,46,49	Moment of Intertia Game
20-Nov	Product of Inertia	10.5	40	10-56,58,64,67	
22-Nov	Principal Moments of Inertia	10.6—10.7	41	10-70,71,74,75	Coach Mohr's Circle
25-Nov	**Thanksgiving Break**				
27-Nov	**Thanksgiving Break**				
29-Nov	**Thanksgiving Break**				
2-Dec	Review		42		
4-Dec	**Fourth Hour Exam**		43	**EVENING EXAM 5:00 - 6:30**	
6-Dec	Review for Comprehensive Final		44		
10-Dec	**FINAL EXAM - Tuesday 1:30-3:30pm - Location TBA**				

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Academic Dishonesty and FERPA Pertaining To CE 50

Printed Name: _____

FERPA Waiver: I hereby waive FERPA with respect to returning homework, exams, and applicable coursework en masse. Course grades are not included in this waiver. I understand that any change to this waiver must be made in writing to the course professor.

_____ (initial)

Syllabus Acknowledgement. Signing below signifies that you have received a syllabus and have read and you understand the listed course requirements including Exam dates and times.

_____ (initial)

Student Academic Dishonesty. Academic dishonesty will not be tolerated and will be handled according to the Student Academic Regulations (registrar.mst.edu/academicregs). Any individual found committing acts of cheating, sabotage, or plagiarism will receive an automatic score of zero on the exam or assignment and will be reported to the Vice Provost for Undergraduate Affairs for appropriate disciplinary action. Further occurrences may result in more severe penalties. An assignment or exam assigned a zero due to academic dishonesty may not be dropped.

Academic honesty is essential for the intellectual life of the University and for your continued academic professional development and growth. As your instructor, I have a very high standard of academic honesty in all of your work in this class. You, as a student in this class, have an obligation to adhere to that high standard. Should a case of academic dishonesty arise during the course of this semester, I shall make an academic judgment regarding your grade on the work in question and in this course overall if necessary. By enrolling in this course and receiving this syllabus, whether in printed or electronic format, you are certifying knowledge of Sections 200.010 (Standard of Conduct) and 200.020 (Rules of Procedures in Student Conduct Matters) in the Collected Rules and Regulations of the University of Missouri and are pledging to abide by them. If you have not yet read these Sections of the Collected Rules and Regulations, you are encouraged to do so. They may be found at the following URL address listed below.

_____ (initial)

http://www.umsystem.edu/ums/rules/collected_rules/programs/ch200

I hereby acknowledge that I have read and understand this Academic Dishonesty and FERPA Pertaining to CE 50 form.

Signed: _____ Date: _____
(you must sign and return within six class sessions to stay in this course)