

ME233 - INTRO TO MACHINE DESIGN**SYLLABUS**Dr. Todd D. Coburn. tdcoburn@cpp.edu. (909) 869-2235. Office 17-2111.

Office Hours: 11 am - 12 pm MTWTh or by appointment (2015 S).

Class	Section	Number	Lecture	Location
ME233/L	1/1	34635/34637	8:00 am – 10:50 pm MW	Bldg 9, Room 333

CLASS SCHEDULE

Week	Date	Lec	Day	Topics	HW Due	PJ Due
1	30-Mar	1	M	Introductions	-	-
1	1-Apr	2	W	Layouts, Sketching & Views	-	-
2	6-Apr	3	M	The Design Process	1	-
2	8-Apr	4	W	Simple Machines - Inclined Plane & Wedge	-	-
3	13-Apr	5	M	Simple Machines - The Lever	2	-
3	15-Apr	-	W	Project A Presentations	-	A
4	20-Apr	6	M	Simple Machines - Wheel & Axle and Pulley	3	-
4	22-Apr	7	W	Simple Machines - The Screw Plus Fasteners	-	-
5	27-Apr	8	M	Simple Machines - Gears Plus P.T. thru Belts Rope & Chain	4	-
5	29-Apr	-	W	Test #1 on Lectures 1-7	-	-
6	4-May	9	M	Simple Machines - Hydraulic Press	5	-
6	6-May	-	W	Project B Presentations	-	B
7	11-May	10	M	Springs	6	-
7	13-May	11	W	Power Transmission - Axles, Shafts, Supports & Couplings	-	-
8	18-May	12	M	Structures & Power Sources	7	-
8	20-May	13	W	Joining - Welds & Bonds	-	-
9	25-May	-	M	Holiday - Memorial Day	---	---
9	27-May	-	W	Test #2 on Lectures 8-13	8	-
10	1-Jun	-	M	Project C Presentations	-	C
10	3-Jun	14	W	Review	-	-
11	8-Jun	-	M	Final Exam 7:00 AM - 9:00 AM	N/A	-

The syllabus will be developing with the course. Be sure to have the latest copy.

GRADING SCALE & WEIGHTS

Course Grading	-----
Homework	20%
Exercises & Quizzes	20%
Projects	30%
Test #1	10%
Test #2	10%
Final Exam	10%

----- Grading Scale -----				
	A	100 % - 93 %		
B+	89 % - 87%	A-	92 % - 90 %	
C+	79 % - 77%	B-	82 % - 80%	
D+	69 % - 66%	C-	72 % - 70%	
	F	55 % - 0%	D-	60 % - 56%

(Optional for those with a cumulative grade of 93%+ after PJ C).

Required Text & Tools:

- Pencil, Paper (Quad or Quint Pad Recommended), Engineering or Scientific Calculator
- Quad Paper and/or Quint Paper Required in each class. Examples include:
 - Ampad Evidence Quad Dual-Pad, Quadrille Rule, Letter Size (8.5 x 11.75)
 - TOPS Cross Section Pad, 1 Pad, 10 Sq./In., Quadrille Rule, Letter Size, White, 50 Sheets/Pad.
- Isometric Paper
 - Clearprint 1000HP Series 8.5 x 11 Vellum Design & Sketch, 50-Sheet Pad Isometric Grid (CP10005410)
 - Staedtler(R) Isometric Bond Paper, 8 1/2In. X 11 In., Grid, 30 Sheets, White

Optional Texts:

- Budynas & Nisbett. Shigley's Mechanical Engineering Design. Any edition acceptable. McGraw Hill. 2011.
- Hindhede, Zimmerman, Hopkins, Erisman, Hull & Lang. Machine Design Fundamentals. Prentice Hall. 1983.

Prerequisites:

- MFE 126/L, C- or better in ME 214 and ME 224L.

Course Description: Introduction to machine & product design. The focus of this class will be to provide students with a basic understanding of machine elements and how they interrelate to collectively become a machine and to provide a function.

Important Notes, Expectations & Comments:

- Be on time to class. Late arrival will result in loss of homework, project & quiz points.
- Attendance is required. Every class has deliverables which will result in loss of points for missing class. Also, students who do not attend class may be dropped from the class.
- Cell phones may not be used in class. Use will result in loss of class credit.
- Laptops may not be used during lectures (Use will result in loss of class credit), but are welcome & encouraged during the lab portion of the class.
- Eating, drinking & sleeping are not allowed in the classroom.
- Cheating is unacceptable and will result in immediate failure of the class.
- Participation in class is desired, recommended, and rewarded.
- The syllabus will be developing with the course, including assignment & lab dates, class topics, etc. Be sure to have the latest copy.

Homework & Project Expectations & Guidelines:

- Homework & project due-dates are shown in the Syllabus.
- Homework & projects are due at the start of class. Credit will be lost if turned in after class starts.
- Homework & projects will not be accepted or scored after class ends on the day they are due.
- Collaboration on homework & projects is recommended. Copying is considered cheating.
- Homework must be graded by student per grading procedure shown below prior to submittal. Ungraded submittals will not be scored or recorded by instructor.

Quiz & Test Expectations & Guidelines:

- Quizzes will be given frequently. Expect them & be prepared.
- Quizzes will usually be given at the start of class. Late arrival will likely miss the quiz.
- No make-up quizzes or exams will be administered.
- Most quizzes & exams will be open book (hardcopy only) & closed notes.
- A student-prepared 3"x5" card of equations will also be allowed on most quizzes and tests.
- No electronic devices (including electronic texts) except calculators will be allowed during exams or quizzes.
- During quizzes & tests, talking, communicating, sharing with other students, and getting out of seat without permission are not allowed and will be considered cheating. Raise your hand to be recognized if you need something during a quiz or test and do not get out of your seat without permission except to turn in your completed work.

HOMEWORK GRADING PROCEDURE

Each student must grade their own homework prior to submittal using a colored pen or marker that stands out from your work. Any ungraded or unidentified work will not be scored, & will show a zero in my gradebook. Detailed grading procedure as follows.

Homework Grading Procedure:

- Score each problem as follows:
 - SETUP: Score 1 point if problem is complete and if all the following is present in your solution:
 - Problem Number - Identified (1, 2, 3, etc) & circled
 - Given, Find, & Solution - Clearly marked & appropriate pertinent data recorded.
 - Neatness – All work is legible & clear & all answers are boxed.
 - SKETCH: Score 1 point if problem is complete & if all the following is present in your solution:
 - Sketches – Includes sketch of problem or idealization and any pertinent dimensions.
 - FBDs – Any applicable or appropriate FBDs are shown with applied loads & reactions.
 - WORK: Score 1 point if problem is complete & if all the following is present in your solution:
 - Equations – All pertinent equations needed and/or used are shown
 - Each and every step in solution is shown.
 - ACCURACY: Score 0, 1, or 2 points, as follows.
 - If all answers of a problem are boxed & match the answer provided, score 2 points.
 - In only some of the answers provided match the solution, score 1 point.
 - If no answer is provided, score 0 points (as if you got it right).
- This means each problem score will range from 1 to 5 based on the above.
- Sum your scores to the top of the first page with the total points earned over the total possible (5 times the number of problems), and circle the total score conspicuously.
- If you want me to see or score something, write “See XYZ” & I will take a look & evaluate.
- I will make any modifications to the grades as needed, and may score punitive point reductions if I feel the scoring is intentionally misleading.
- Any ungraded homework or homework without a name will not be scored, and will show a zero in my gradebook.
- Some homework problems will be designed to measure student performance. These will initially be graded by student per normal procedure, but will be rescored by professor and may even be worth more points.

If there are questions, see me.