

  
**F O L S O M   L A K E   C O L L E G E**  
 EL DORADO CENTER ♦ RANCHO CORDOVA CENTER

# Engineering 420 Fall 2015 Syllabus

This is a CS/UC transferable course.

Course # 15719      MW    5:30 p.m.- 6:50 p.m.      FLC Lilac Hall (FL5) 113

**Instructor:** Marc Olsen  
**Office:** Aspen (FL1) 148

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**Office Phone:** 916-608-6759  
**Cell Phone:** 916-850-0352

**Office Hours: Morning office hours are held in FL1 208**

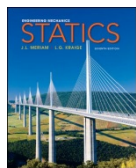
Monday	Wednesday	Friday
8:30-8:50 am	8:30-8:50 am	8:30-8:50 am
12:15-1:00 pm	12:15-1:00 pm	12:15-12:55 pm
4:10-5:15 pm		

Or by appointment

When contacting me by phone, text, or email, please be sure to include: your full name, the title of the class:

**EXAMPLE: Hi, its Isaac Brock, from your Statics class...**

**I will do my best to get back to you as soon as I can during the regular business week, and I do not necessarily check for student communication after 5 pm weekdays, on Thursdays, or weekends.** If you come by to see me in my office(even at non-office hour times), please knock as I may be in my office even when my door is closed.



**Required Text:**

**Engineering Mechanics: Statics  
by Meriam, Kraige 7th Ed.**

You may purchase a [hard copy](#) of the text or an [electronic version](#), or both.

You will need a good calculator, scientific is ok, but a more advanced calculator with advanced matrix abilities and equation solvers is highly recommended. I recommend getting one that uses RPN (reverse polish notation) like the HP Prime graphing calculator.

**Smart phones may also be used in class for class related business. Please do not misuse your phone which may create a disruption to other students. Disruptive behavior is left to the instructors discretion.**

**Prerequisites:**

MATH 401 (*Calculus II*) and PHYS 411 (*Mechanics of Solids and Fluids*) with grades of "C" or better. Proof can be satisfied with a transcript along with the course description (if it is a non-Los Rios college)

**Student Learning Outcomes and Objectives:**

*Upon completion of this course, the student will be able to:*

- apply vector mathematical principles to determine 2-dimensional and 3-dimensional forces, moments and equivalent force/couple.
- apply equilibrium principles to determine the external forces of both 2-dimensional and 3-dimensional rigid bodies in static equilibrium.
- apply equilibrium principles to determine the internal forces of beams, trusses, frames and machines.

- determine the centroids and moments of inertia of 2-dimensional and 3-dimensional bodies using algebra and calculus principles.

**Grading:** The approximate Grading breakdown is as shown below. *The instructor reserves right to adjust this scale or scheme when he deems appropriate.*

Homework	16%	80 pts	90-100%	A
Exams (4)	64%	320 pts	80-89%	B
Final Exam	20%	100 pts	70-79%	C
	100%	500 pts	60-69%	D
			less than 60%	F

$$\text{Your grade} = \frac{\text{Your Points}}{\text{Total Points}} \text{ and can be calculated by you.}$$

Extra credit may be given during the semester at the instructor's discretion.

### Participation:

You are expected to be in class each meeting time on time, prepared for the lesson. You are encouraged to be an active learner/participant in class and to pre-read the book section. Your questions and participation in class discussions are necessary for getting the most out of this class. If you are a shy student you may try talking a little more than you are comfortable with to expand your self-understanding and maximize your potential in this class. You are strongly advised to form regular study groups and study with your classmates.

### Homework:

A homework grade averaging over an 85% will grant you the right to replace your lowest exam score with your HW grade.

HW will be given once a week and generally consists of about 10 problems. They will be due one week from the date they are assigned. HW will be graded at the instructor's discretion. Generally, a selection of the assignments will be graded for format, and quality (answers to all problems are in the back of the book). Failing to do this or meet any of the following guidelines will result in a severe penalty.

- Each HW problem should be written on engineering paper only. One problem only to a page (multiple pages may be used on one problem if necessary)
- Each page should include your name, the course name, the chapter number, chapter section, and problem number at the top of the page. You must also copy the problem statement and a well-drawn diagram for each problem.
- HW should be neat, organized, and follow a logical flow. You may consider doing your initial brainstorming and initial calculations on scratch paper, then, once you have the correct method, you can write your detailed analysis of the problem including all calculations and final answers rounded correctly per the guidelines laid out by the text book on your HW paper.
- The end of each problem should include a note to yourself describing anything you learned in the problem. Common notes may include, places that you made any errors (so you may track them and improve), overall strategy for solving the problem, new information that was learned during the process of solving the problem, whether or not the problem is a good representative of the section and should be reviewed again before the exam, etc. Length of the note is not important, the quality of it is.
- HW will not be discussed in class. It is your assignment to do outside of class time. Office hours may be used to provide guidance and help on HW problems.
- Copying other students HW without understanding and internalizing the work is not acceptable and may be considered plagiarism depending on the case.

**Late HW and Make ups may not be allowed and are subject to instructor discretion.**

**Exams:**

There will be 320 points (approximately 68% of total grade) possible on 4 exams (80 pts each) given throughout the semester. Calculators will be allowed but no devices with communication capabilities, cell phone, I-pad tablet, computer, etc. unless an exception has been made by the instructor. At no time shall students be allowed to use any other electronic devices, books, aides, or device that allows communication, or viewing/listening to information of any kind. If you are going to miss an exam contact me with as much prior notice as possible so we can discuss your situation. There will be no make-up exams, under extreme situations an exception may be made prior to the exam at the instructor's discretion.

**Final Exam:**

The final exam will be cumulative.

Our final exam is:

MWF class	The final exam will be held on Monday, Dec 14 <sup>th</sup> from 6:00 - 7:50PM in our regular room.
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Please note the **Final Exam time is different than our regular class times.** So mark your schedule now to allow the class time to go longer than usual!!

**Classroom Expectations:**

You should act accordingly to being in an institution of higher learning. You are expected to behave in a courteous manner both toward your classmates and instructor. You are expected to adhere to FLC's Students Rights and Responsibilities policies in the FLC course catalog. If you must enter or leave the classroom at any time during class, please do so without disrupting the rest of the class. **If you are behaving in a manner that inhibits me from teaching or anyone around you from learning, you may be asked to leave at the discretion of the instructor.**

At the instructors discretion if you are asked to leave:

- it will be for the remainder of the class period and for the next class session.
- you will not be able to make up any missed work or work that is due or assigned on days you were asked to leave.
- both days will count as absences and the incident may be reported to the Disciplinary Authority at FLC.

**It is your responsibility to save all of your returned work and exams. This is your only record of the work you have completed.**

**Attendance:**

Attendance is your responsibility. You are responsible for any missed material and should consult with your classmates to get caught up on what was missed. If you are absent or late on a day that HW is due, then make arrangements for your work to arrive on time or it may not be accepted. Truancy is defined as not being in class without having permission to not be there; this means coming late or leaving early from the regularly scheduled class times makes a person truant. Any truancy will be counted as ½ an absence and any work turned in or due that day may not be accepted, graded, or considered. Missing an entire class period counts as 1 full absence. Coming late to an exam may result in an immediate loss of 5% of that exam grade. **Any tests or assignments missed due to absence is inexcusable unless** you have been **given approval by the instructor prior to the start of class.** In the case of an absence you should contact me immediately and prior to the start of class. **You will not be allowed to make up or turn in late work without approval of the instructor prior to the date due.** It is the responsibility of the student, and not the instructor, to process a class drop either online or in person. However **I may drop any student if their absences are excessive (FLC defines excessive absences to be 6% of the scheduled 54 hours of class meetings which is approximately 2.25 class sessions, which will be rounded to 2.5 classes).**

**Academic Integrity:**

Please refer to the FLC Academic Code of Conduct in the college catalog if there are any ambiguities for what is expected from your academic integrity. Cheating may be punished swiftly and severely. If you are caught cheating on an exam, you may receive a zero on the exam and not be allowed to replace your score or take any kind of makeup. Further, you may not be allowed to submit any extra credit work. I may complete paperwork to ensure that there is a record of your dishonesty.

**D.S.P.S Students:**

If you qualify for D.S.P.S. **it is your responsibility to comply with their practices.** It is your responsibility to coordinate exam and quiz dates. You may not schedule exam and quiz dates any day after the regular exam/quiz date unless it is due to D.S.P.S. scheduling conflicts. Any conflict in your schedule is an unacceptable excuse to push back exam/quiz dates.

**Helpful Tips:**

Work problems!! Do all the assigned ones, then do some that are not. Then do some of the problems again. Read the book and go over the example problems before your come to class. This will help a lot. Talk in class, don't be afraid to ask questions or to come see me in office hours or make an appointment with me. Form a study group and get the phone numbers of your classmates so you have resources to help you when you become stuck. Do not stay on one problem if you become stuck for more than 30 min. If you get stalled out at a point, move on to the next problem.

**Tips for Success:**

- 1) Study!! As Euclid of Alexandria is credited with saying, "There is no royal road to learning mathematics", meaning if you want to learn it you're going to have to study it like everyone else did.
- 2) Study in groups, with friends, strangers, or anyone willing to explain things to you. Study in the FLC Tutor Center in FL1-108 where tutors and other classmates may be available to help you on a first come first served basis.
- 3) Study in Office hours, or just come in to say hi and ask a question.
- 4) Make sure you understand each homework assignment and can reasonably follow the class discussions. There truly is no such thing as a stupid question and in math the only thing that can make you look stupid is not asking your questions. Chances are you will look smart and odds are if you don't know, there are others who also do not.
- 5) Study for the tests, quizzes and the final by reading through your **class notes**. **Look over the examples completed in class, review any of the hints the instructor may have given during lessons** about "classic problems," problems "I really like" etc. Re-work some of the more difficult, challenging, or test like problems. **Look over previous exams, some questions may show up again.** Study Every Day! Even if you only read one section and did not understand it, or if you only study for 30 minutes, it is still much more than never studying for that day.
- 6) Most importantly, **KEEP A POSITIVE OUTLOOK!** Each day is a new chance to feel like you are capable, that you can understand math, and that you **WILL** succeed.

**What I know you already know, but thought you could say you didn't know:**

You are responsible for the information in this syllabus as well as any changes or additions announced in class (whether or not you are there to hear them). This syllabus is our mutual agreement of the expectations between the student and the instructor.

**The Fine Print: The Instructor reserves the right to change any of the above policies after verbal/written notice in class.**

## Fall 2015 Final Exam Schedule

The final day of regular instruction for the semester is **December 10, 2015**. For classes that are a combination lecture and lab, the final exam schedule is based on the time of the lecture.

Class starts between these hours:	Class meeting days:	Date of Exam:	Time of Exam:
7:00AM - 8:00 AM	M-only	Monday, December 14	7:00AM - 8:50AM
7:00AM - 8:00 AM	T-only	Tuesday, December 15	7:00AM - 8:50AM
7:00AM - 8:00 AM	W-only or MW	Wednesday, December 16	7:00AM - 8:50AM
7:00AM - 8:00 AM	TH-only, TTH, or MTWTH	Thursday, December 17	7:00AM - 8:50AM
7:00AM - 8:00 AM	F-only or MWF	Friday, December 11	7:00AM - 8:50AM
8:05AM - 9:30AM	M-only or MW	Monday, December 14	9:00AM - 10:50AM
8:05AM - 9:30AM	T-only or TTH	Tuesday, December 15	9:00AM - 10:50AM
8:05AM - 9:30AM	W-only	Wednesday, December 16	9:00AM - 10:50AM
8:05AM - 9:30AM	TH-only	Thursday, December 17	9:00AM - 10:50AM
8:05AM - 9:30AM	F-only, WF, or MWF	Friday, December 11	9:00AM - 10:50AM
9:35AM - 11:30AM	M-only	Monday, December 14	11:00AM - 12:50PM
9:35AM - 11:30AM	T-only	Tuesday, December 15	11:00AM - 12:50PM
9:35AM - 11:30AM	W-only or MW	Wednesday, December 16	11:00AM - 12:50PM
9:35AM - 11:30AM	TH-only or TTH	Thursday, December 17	11:00AM - 12:50PM
9:35AM - 11:30AM	F-only or MWF	Friday, December 11	11:00AM - 12:50PM
11:35AM - 1:45PM	M-only, MW, or MTWR	Monday, December 14	1:00PM - 2:50PM
11:35AM - 1:45PM	T-only or TTH	Tuesday, December 15	1:00PM - 2:50PM
11:35AM - 1:45PM	W-only	Wednesday, December 16	1:00PM - 2:50PM
11:35AM - 1:45PM	TH-only	Thursday, December 17	1:00PM - 2:50PM
11:35AM - 1:45PM	F-only or MWF	Friday, December 11	1:00PM - 2:50PM
1:50PM - 3:55PM	M-only or MW	Monday, December 14	3:00PM - 4:50PM
1:50PM - 3:55PM	T-only	Tuesday, December 15	3:00PM - 4:50PM
1:50PM - 3:55PM	W-only	Wednesday, December 16	3:00PM - 4:50PM
1:50PM - 3:55PM	TH-only or TTH	Thursday, December 17	3:00PM - 4:50PM
1:50PM - 3:55PM	F-only or MWF	Friday, December 11	3:00PM - 4:50PM
4:00PM - 4:15PM	MW	Monday, December 14	4:00PM - 5:50PM
4:00PM - 4:15PM	T-only or TTH	Tuesday, December 15	4:00PM - 5:50PM
4:00PM - 4:15PM	W-only	Wednesday, December 16	4:00PM - 5:50PM
4:00PM - 4:15PM	TH-only	Thursday, December 17	4:00PM - 5:50PM
4:00PM - 4:15PM	F-only or MWF	Friday, December 11	4:00PM - 5:50PM
4:20PM - 6:00PM	M-only or MW	Monday, December 14	6:00PM - 7:50PM
4:20PM - 6:00PM	T-only or TTH	Tuesday, December 15	6:00PM - 7:50PM
4:20PM - 6:00PM	W-only	Wednesday, December 16	6:00PM - 7:50PM
4:20PM - 6:00PM	TH-only	Thursday, December 17	6:00PM - 7:50PM
4:20PM - 6:00PM	F-only or MWF	Friday, December 11	6:00PM - 7:50PM
6:05PM - 9:00PM	M-only	Monday, December 14	8:00PM - 9:50PM
6:05PM - 9:00PM	T-only or TTH	Tuesday, December 15	8:00PM - 9:50PM
6:05PM - 9:00PM	W-only or MW	Wednesday, December 16	8:00PM - 9:50PM
6:05PM - 9:00PM	TH-only	Thursday, December 17	8:00PM - 9:50PM
6:05PM - 9:00PM	F-only or MWF	Friday, December 11	8:00PM - 9:50PM

Finals start on Friday, December 11. The last day of regular instruction is Thursday, December 10.

Fuyll-term Saturday-only classes meet at normal time for 2 hours on Saturday, December 12.

Finals for first 8-week session and second 8-week session classes are held on the last day of class.