

COURSE SYLLABUS

70688 ENGR M01 – Introduction to Engineering, 2.0 Units

Class Time:	Lecture T	1:00-1:50 PM	Room PS-207
	Lab T	2:00-4:50 PM	Room PS-207

INSTRUCTOR & DEPARTMENT INFORMATION

Instructor: Scarlet Relle, Ph.D.
Office: PS-235
Office Hours: M 11-1 & 3-4; T 10-11; W 10-11; Th 10-12
Voicemail: (805) 553-4162
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Chair: Prof. Ronald Wallingford in PS-236
Dean: Julius Sokenu, Ed.D. in AC-232
Phone: (805) 378-1572

COURSE OVERVIEW

Introduction to Engineering explores the branches of engineering, the engineering profession, the interface of the engineer with society, and engineering ethics. Explains the engineering education process and explores effective strategies for students to reach their full academic potential. Introduces the methods of engineering analysis, engineering design and problem solving. Develops written, computer and oral communication skills in analyzing and presenting data as it relates to engineering design and problem solving.

COURSE OBJECTIVES

Upon completion of the course student should be able to:

1. Classify the different engineering branches, describe the role of engineers in society, the functions of engineers, and the industries in which they work.
2. Identify and describe academic pathways to four-year degrees.
3. Develop and apply effective strategies to reach full academic potential.
4. Explain the role of professional engineers, and apply the principles of engineering ethics and standards.
5. Demonstrate knowledge of effective practices for research, gathering of data, writing technical engineering reports, and making oral presentations.
6. Analyze engineering problems using the engineering design process.
7. Demonstrate basic computational, data manipulation, manual and computer aided drawing skills.
8. Demonstrate teamwork skills necessary for successful completion of engineering design projects.

Please Note: Periodically speakers from the industry or the academics will be invited to our classroom to give lectures and presentations.

INSTRUCTIONAL MATERIALS

Textbook: Saeed Moaveni, Engineering Fundamentals; An Introduction to Engineering, 4th ed. Cengage Learning.

Supplementary Textbook: Raymond Landis, Studying Engineering, 3rd ed. Discovery Press.

Handouts: Occasionally handouts, lecture notes, and other reference material will be provided to aid your understanding of the subject matter. Also, assignments in addition to the ones provided in the textbook will be assigned and required for further assessment of your progress in the course.

EVALUATION & GRADING POLICY

The following rubric will be used in determining your final grade in this course:

Homework/Classwork	(15%)
Instructor Led Hands-On Activities	(15%)
Design Projects	(25%)
Exams	(20%)
Final: Exam & Design Project	(25%)

A: (90-100%) **B:** (80-89%) **C:** (70-79%) **D:** (60 - 69%) **F:** (59% and below)

HOMEWORK/CLASSWORK/ASSIGNMENTS

There will be written assignments – HW or CW. You are **STRONGLY ENCOURAGED AND EXPECTED** to complete all written assignments as this is the best way to learn the material! Assignments that you take home to complete must be typed (use 12 pt., single spaced, double spaced between paragraphs), must have your name and the name of the assignment, and the date you turned in the HW. Late work will not be accepted.

INSTRUCTOR LED HANDS-ON ACTIVITIES

In order to increase your understanding of certain topics and concepts that are covered in the course, you will participate in and complete several hands-on activities as directed by the professor. You will be given a hand-out and a demonstration for each activity. These activities will be completed in groups, and all group members will receive the same grade on the assignment, so please help each other and work together in a professional manner.

EXAMS

Exams will cover materials from the textbook, hands-on activities, and any handouts or lecture notes that are distributed in class. You will have 1 hour to complete each exam. The final exam will cover selected topics from the entire course, and you will have 2 hours to complete the final exam. Exams may consist of short answers, problem solving, multiple-choice & true/false questions.

DESIGN PROJECTS

Since engineers often work in groups, it is essential for you to practice teamwork. As such, in groups of two to four you will complete three or four design projects during this semester. Each design project will focus on one engineering discipline or subdiscipline. For each project, your team will physically construct the design, write a technical report, prepare a Power-Point presentation and also an engineering drawing of the design. One of these drawings will be computer generated using CAD (more information on this will be provided). All group members will receive the same grade for the project, so please help each other and work together in a professional manner.

ADDITIONAL POLICIES**PARTICIPATION**

Participation in my class is mandatory. I expect you to come to class prepared, ready to learn and to participate. You must bring with you to class your textbook, a notebook to take notes during class discussions and hands-on activities, a scientific calculator, and a binder or folder to keep all your papers and handouts organized.

USE OF LISTENING, VIDEO, OR OTHER RECORDING DEVICES

I do not permit the use of any electronic listening or recording devices by anyone in my classroom. If you need to use a recording device as an authorized disability accommodation, then you must provide me with verification from ACCESS prior to the use of the device.

USE OF LAPTOP COMPUTERS

You may use laptop computers in the classroom only for note taking, technical report writing, and Power Point preparation purposes. You may not surf the web, play games, or engage in any activity which I would consider disruptive to your learning process.

USE OF CELLPHONES

You may not use your cell phone during class, it must be turned off! Also, you may not use your cell phone in lieu of a scientific calculator.

STUDENT RESPONSIBILITY

You, as the student, are responsible for **all** material presented in class and in assignments. Make-up exams will be given **only** in case of verified illness or exceptional circumstances. You must contact me in a timely manner to schedule a make-up exam.

DISABILITIES ACCOMODATION

Appropriate accommodations will be made for students with disability related needs. Students with a disability, whether physical, learning, or psychological, who believe they will need accommodations in this class, are encouraged to contact ACCESS as soon as possible so accommodations can be set up in a timely fashion. Accommodations are based on eligibility and can only be provided if you have submitted verification from ACCESS in the form of a Confidential Memo. The ACCESS office can be reached at (805) 378-1461 and is newly located in the LMC.

ACADEMIC INTEGRITY

Academic integrity and honesty is of utmost importance. Cheating of any kind will not be tolerated in this course. Cheating includes turning in someone else's work as your own, copying from someone else's paper, using "cheat sheets", class notes, the textbook, unauthorized technology, programmable or graphing calculators, or sharing calculators during exams and in-class quizzes. Cheating will result in a letter grade of "F" equivalent to zero points for that particular assignment/quiz/test, and any previous assignments will be called into question. In addition, a report will be made to the Behavior Intervention Team.

NO SMOKING POLICY

In the interest of the health and welfare of students, employees, and the public, smoking is not permitted on the Moorpark College campus other than in the parking lot.

IMPORTANT DATES

August 30th: Last day to drop with full refund or credit (All students/Fall semester only)

September 6th: Last day to drop a semester-length class without a "W"

November 22nd: Last day to drop a semester-length class with a "W"

CLASS SCHEDULE

DATE	TEXT	LECTURE TOPICS	ACTIVITY	EXAM
8/20	Syllabus Handouts Chapter 1 Introduction to Engineering Ch. 7 & Ch. 9 partial	Introduction to class; Introduction to the engineering profession and engineering disciplines	Making Measurements of Length; Calculations of area, volume, and density; Systematic and random errors in measurements; Averages and standard deviations	
8/27	Ch. 6 Units Ch. 14 Spreadsheets	Formulas; Plotting; Curve Fitting	Units of measurements; Significant figures; Using Microsoft Excel spreadsheet - training 3:30 – 5:30 pm LLR - 126	

9/3	Chapter 3 Introduction to Engineering Design	Engineering design process; sustainability in design; material selection; team work; conflict resolution	Design Project I Building a Catapult Visit to the Library 4:00 – 5:00	
9/10	Chapter 4 Engineering Communication Skills	Presentation of engineering work; Solution of engineering problems; Technical report writing; Oral communication and presentation; Graphical presentation	Continue working on the catapult Begin work on your report; Power Point presentation; graphical presentation	
9/17	Chapter 16 Engineering Drawings	Introduction to AutoCAD Importance of engineering drawings; orthographic, sectional, isometric; dimensioning and tolerancing; why do we need symbols	Continue working on the catapult, report, PP presentation; graphical presentation Visit the AutoCAD lab 3:50 – 5:00 pm	
9/24	Chapter 5 Engineering Ethics	Code of ethics; Engineering marvels and disasters	Continue working on the catapult, report, PP presentation; graphical presentation	Exam I All material covered in class thus far
10/1	Chapter 7 Length Parameters	Second moment of area	Due - Catapult project (PPP, report, drawing)	
10/8	Chapter 10 Force	Force; Newton's Laws; Pressure and Stress; Work	Design Project II Building a Pasta Tower	
10/15	Continue with Chapter 10		Continue working on the Tower	
10/22	Speakers		Continue working on the Tower	
10/29	Chapter 12 Electric Current	Electric current; voltage; AC and DC current; Circuits	Due – Tower project (PPP, report, drawing)	
11/5	Continue with Chapter 12	Electric current; voltage; AC and DC current; Circuits	Hands-on Activity Building a Solar Vehicle	Exam II All material covered since exam I
11/12	Chapter 13 Energy and Power	Work; Kinetic and Potential Energy; Machines; Efficiency; Power	Design Project III - Final Build a Car	

11/19	Continue with Chapter 13	Work; Kinetic and Potential Energy; Machines; Efficiency; Power	Continue working on the Car	
11/26	Chapter 17 Engineering Materials	Material selection; material properties	Continue working on the Car	
12/3	Chapter 2 Preparing for an Engineering Career	Transition to college; budgeting time; study habits; getting involved in professional organizations	Continue working on the Car	
12/10	Review		Due – Final Car Project (PPP, report, drawing)	
12/17 T	FINAL EXAM -- Selected topics from the <u>entire course</u> 12:30 – 2:30			

The instructor reserves the right to change class policies and class schedule if necessary.