

University of Texas at El Paso
Foundations of Engineering
UNIV 1301
Fall 2015

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OFFICE HOURS:	Tuesday 12:00 noon -2:00 PM Wednesday 9:00 AM – 11:00 AM
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TEXT:	Studying Engineering: A Road Map to a Rewarding Career, 4 th Edition, by Raymond B. Landis (2013). Los Angeles: Discovery Press.

Other materials needed:

One 3 ring binder or notebook for readings/handouts, class notes, assignments and/or journal entries.

Course Description

“Foundations of Engineering” is the **Gateway** to your engineering education at the University of Texas at El Paso and to the exciting profession of engineering. You will have the opportunity to make meaningful connections to the magic of engineering and to contribute to the UTEP legacy of leadership in developing outstanding students and career professionals. The Foundations **you** build will enable you to be a successful student and a successful engineer! The foundations are tools for developing:

- academic skills and personal growth skills
- engineering skills in critical thinking and problem solving
- mathematical tools and applications for engineering
- connections with the engineering profession and opportunities to appreciate the world of engineering

At the end of the semester you will:

- Begin to understand your role, opportunities and responsibilities that impact your success within the context of the university.
- Have learned about and practiced essential academic skills in order to strengthen performance in the university setting.
- Begin to build a strong network of faculty, staff, and peers in order to create a supportive and positive learning experience/environment.
- Begin to assess and better understand your own interests, abilities and values in order to more efficiently pursue your academic, career, and life goals.
- Have become involved in UTEP activities and campus resources.

The Center for Accommodations and Support Services (CASS): Students requiring unique accommodations must contact the CASS office and provide their instructor with the proper documentation at the beginning of the semester. CASS office may be contacted at 747-5148, cass@utep.edu or go to Room 106 Union East Building.

Grading:	2 Exams	30%
	Final Exam	20%
	Project and Presentation	20%
	Attendance	10%
	Homework, quiz, class participation, activities and survey	20%

Project: The project will be a team design engineering project. More information and deadlines about the project will be given at a later date.

Presentation: The presentation will be about the project you designed. It will be a fifteen minute presentation using power point. All of the team members are required to present.

Homework: The homework must be turned in at the beginning of the class by the due date. As part of your homework, you may be required to have at least 1 mentoring session and attend some UTEP events.

Quizzes: Some quizzes will be given at the beginning of the class and others will be online in Blackboard. No make up quiz will be given if you are late or absent for any reason.

Class Participation and Activities:

There will be many in class group and individual activities. In order to get a grade for them you must participate in the activity. There will be no make up for any of the class activities.

Survey: There will be an end-of-semester survey. Your participation is important and it will count as a homework and class activity.

Grading Scale:

100%-90%.....A
89.9% -80%.....B
79.9% -70%.....C
69.9% -60%.....D
59.9% - 0%.....F

Attendance: You are required to come to class and be on time. Attendance is very important since during class you will be given the tools needed to successfully complete this class. You must contact your peer leader and/or instructor if you know you will be absent either by phone or email. It is your responsibility to get all the lecture notes, assignments, and hand-outs you missed. An excused absence will only be given as described in the undergraduate catalog. If you want to be dropped after the automatic W deadline, you must contact your professor or peer leader. Although you can be dropped after 4 sessions (6

hours) for excessive absences, do not assume that if you stop showing up to class, you will be dropped.

Mentoring: You will be meeting, on a one-to-one basis, with your peer leader and your instructor at least once during the semester. Each meeting will count as one homework.

Missing assignments and exams:

You will be allowed one make up homework assignment during the course of the semester. You will lose 20 % and be given a second deadline.

Exams can only be made up from the day the exam is given in class to the next class day. Example: if the exam is on a Tuesday, you can take the exam on that Tuesday, Wednesday (the next day) and Thursday (prior to the class time).

However, 30 % will be deducted from your actual grade.

Academic Conduct:

Academic dishonesty will not be tolerated. You must submit your work only. If you are found to be cheating or plagiarizing, you will be subject to disciplinary action, per UTEP catalog policy (<http://www.utep.edu/dos/acadint.htm>).

Cell Phone: All cell phones must be turned off before the beginning of the class. If a student forgets to turn it off, he/she will have to leave the classroom and may only return with the instructor's permission.

Harassment: Please be aware that harassment is unacceptable in the classroom. No jokes, comments of sexual nature as well as racists will be tolerated. The student that uses harassment will be sent to the Dean of students for disciplinary action.

Important Fall XXXX Dates:

Labor Day – no classes	September 7
Homecoming Week	October 1-3
Drop deadline	October 30
Thanksgiving – no classes	November 26-27
Dead Day	December 4

Important College of Engineering Dates: TBD

Gold Rush/College of Engineering Open House	September XX
Engineering Mixer	September XX
Career Expo	September XX
Order of the Engineer / Hooding Ceremony	December XX
TCM Celebration - campus-wide Celebration	March XX

NOTE: Except for changes that substantially affect the evaluation (grading) statement, this syllabus is a guide for the course and is subject to change to improve the course with advance notice.

Calendar

Date	Class Topic	Readings/Assignments/Activities
8/25 T Week 1	Course purpose and philosophy	Due 9/1: 1) Purchase engineering computation paper; acquire text and 3-ring binder. 2) Reading Assign: Ch. 1 (Sections 1-5) (Ice Breaker)
8/27 R Week 1	Linear Equations; Keys to Success in Engineering Study	Individual vs. group work (math problem) Peer leader Introductory Activity Ch. 1 Problems 1, 2, 4, 15 (Small Group Discussion)
9/1 T Week 2	Linear Equations (continued); Keys to Success in Engineering Study (continued)	Due 9/3 Text Assign: Ch. 1, Problems 21 -24, 26 – 27 (in textbook & journal); Problems 24 & 26 do not require written plan. Due 9/10 Homework - Linear Equations (HW #1)
9/3 R Week 2	The Engineering Profession - What is Engineering, its rewards, its past?	Team Work: Engineering characteristics & rewards Due 9/8: 1) Reading Assign: Ch. 2, Sections 1 – 2, 4 - 5 2) Text Assign: Ch. 2, Problems 2 & 3 (word process)
9/8 T Week 3	Career Services Presentation	Work on your resume Due 9/15 1) Reading Assign: Ch. 2, Sections 6 – 10
9/10 R Week 3	Best Fit Linear Curves; The Engineering Profession - Engineering Disciplines & Opportunities	Due 9/15 1) Homework – Spring Best-Fit Graph (HW #2) 2) Text Assign: Ch. 2, Problems 22, 26 & 27 (word process) Due 9/17: 3) Homework - Best Fit via Excel (HW #3)
9/15 T Week 4	Engineering Disciplines and Opportunities (continued)	Due 9/24 Homework - Career Expo paper (HW # 4) Due 9/17 Reading Assign: Ch. 3, Sections 1- 4
9/17 R Week 4	The Teaching/Learning Process; Quadratic Equations	Due 9/24 Homework – Quadratic Equations (HW #5) Due 9/22: 1) Reading Assign: Ch. 3, Sections 5 – 7 2) Text Assign: Ch. 3, Problems 3 & 4 Attend Career Expo 9/18 & 9/19
9/22 T Week 5	Quadratic Equations (continued); The Teaching/Learning Process (continued)	Team work on completing the square process for solving quadratic equations In-Class discussion: Learning styles
9/24 R Week 5	Review for Exam #1	Note: Text Pages 149 - 151 – 5.3 Preparing For and Taking Tests
9/29 T Week 6	Exam #1	Exam #1 Math Topics: Linear Equations; Linear Regression; Quadratic Equations; Text Ch. 1 – 3

Date	Class Topic	<p>Due 10/3 Academic Skills Survey (end of Ch. 3) & Problems 12 & 13 of Ch. 3 (can be handwritten)</p> <p>Readings/Assignments/Activities</p>
10/1 R Week 6	Making the Most of How You are Taught	<p>Due 10/6 - Reading Assign: Ch. 4, Sections 1 – 5</p> <p>Due 10/8 - Text Assign: Ch. 4, Problems 3 (this class syllabus), 6, 11 (note taking) (word process submission)</p>
10/2 (Special day Friday)	Mentoring	<p>Schedule time with professor one on one. Alternate day and time might be available if needed</p>
10/6 T Week 7	<p>Making the Learning Process Work for You</p> <p>Unit Conversions & Prefixes</p>	<p>Due 10/8 - Reading Assign: Ch. 5, Sections 1 & 2</p> <p>Due 10/13 Homework - unit conversions (HW #6)</p> <p>In-Class Discussion: Text Ch. 4, Problem 17</p>
10/8 R Week 7	<p>Making the Learning Process Work for You;</p> <p>Discovering relationship of engineering to other studies/professions.</p>	<p>Due 10/15:</p> <ol style="list-style-type: none"> 1) Text Assign (HW #7): Ch. 5, Problems 3 & 4 (engineering computation paper) 2) Read handouts on cross-fertilization (<i>SWE Biomimicry</i>) & 9 Life Lessons Come from Your Garden (<i>El Paso Times</i>)
10/13 T Week 8	Right Triangle Trigonometry; Making the Learning Process Work for You	<p>Due 10/22 Homework - Right Triangle Trigonometry (HW #8)</p> <p>Due 10/20:</p> <ol style="list-style-type: none"> 1) Reading Assign: Ch. 5, Section 3 & 4 2) Text Assign: Ch. 5, Problem 10 (word process submission)
10/15 R Week 8	Right Triangle Trigonometry (continued) Personal Growth & Development – Knowing Yourself	<p>Due 10/22 Reading Assign: Ch. 6, Sections 1, 2, 5</p> <p>Due 10/27:</p> <ol style="list-style-type: none"> 1) Reading Assign: Ch. 6, Sections 3, 4, & 6; 2) Text Assign: Ch. 6, Problems 2, 3, 5 (Journal)
10/20 T Week 9	Measurement & Significance (Accuracy); Personal Growth & Development (continued)	<p>Due 10/29:</p> <ol style="list-style-type: none"> 1) Homework - Significance and Accuracy (HW #9) 2) Text Assign: Ch. 6, Problems 24 & 27 (Word process submission) <p>Group Discussion Ch. 6, Problems 7 & 22</p>
10/22 R Week 9	Library Orientation – Meet in Library 	<p>Engineering Accidents/Disasters Team Research Paper (Due 11/17)</p>
10/27 T Week 10	Measurement & significance (continued); Personal Growth & Development (continued)	<p>Due 10/29 Reading Assign: Ch. 6, Sections 7, 8 & 9</p> <p>Due 11/3 Text Assign: Ch. 6, Problems 20 & 21 (word process submission)</p> <p>Classroom practice on significant digits, engineering notation, and scientific notation.</p>
10/29 R Week 10	Exam #2 Review	<p>Exam #2 Topics – Units & Conversions; Measurement and Significance; Right Triangle Trigonometry</p>

Date	Class Topic	Readings/Assignments/Activities
11/3 T Week 11	Exam #2 Broadening Your Education	Exam #2: Units & Conversions; Measurement and Significance; Right Triangle Trigonometry Text Ch. 4 – 6 Due 11/5: 1) Reading Assign: Ch. 7, Sections 1 - 5 2) Text Assign: Ch. 7, Problem 23 (develop 10 questions for Professor Little) (word process submission)
11/5 R Week 11	Laws of Cosines and Sines; Broadening Your Education (continued) Application to robotics	Due 11/10: 1) Reading Assign: Ch. 8, Sections 1 – 3 2) Motivational Quote that “speaks to You” on notecard Due 11/12: 1) Text Assign: Ch. 8, Problems 1 & 2 (Word processed) 2) Homework – Laws of Cos and Sine (HW #10) Research Team 5 Library
11/10 T Week 12	Laws of Cosines and Sines (continued); Engineering Education System Applications	Group Work – Laws of Cosines and Sines; Ambiguous Case Class Discussion – Ch. 7 Problem 23 informational questions ESP survey on-line (HW#11)
11/12 R Week 12	Engineering Education (continued; Student Conduct & Ethics	Due 11/17 Reading Assign: Ch. 8, Sections 4, 5 & 6 Due 12/3 Text Assign: Ch. 8, Problem 3 (word process submission); be prepared for 2-minute talk.
11/17 T Week 13	Math Systems; Engr Study and Other Careers Robotic project	Due 11/24 Homework - Math Systems (HW#12) Due 11/24 Reading Assign: Ch. 8, Sections 7 & 8 Robot programming
11/19 R Week 13	Robotic Project	Robot programming Project Team preparation for technological disaster presentations
11/24 T Week 14 11/26 R	Project Preparation No Classes – 11/27 & 11/28- Thanksgiving	Project preparation in teams Team preparation for project presentations <i>Happy Thanksgiving!</i>
12/1 T Week 15	Project Presentations	Project Presentations
12/3 R Week 15	Class wrap-up	Team Work: Case Studies in engineering ethics
		Friday Dec. 4 Dead Day – No Classes
12/8	Final Assessment – Research Presentations Final Exam	Final Exam, Dec. 8, 1 PM – 3:45 PM