

**University of Texas at El Paso**  
**Foundations of Engineering**  
**UNIV 1301**  
**Fall 2017**

**Course Information:**

**Classroom:** Quinn Hall 203

**CRNs:** 16472

**Class Time:** MW 9:00 am to 10:20 am

<b>INSTRUCTOR:</b>	Amit Joe Lopes, Ph.D.
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<b>PHONE:</b>	9157475958
<b>EMAIL:</b>	<a href="mailto:ajlopes@utep.edu">ajlopes@utep.edu</a>
<b>OFFICE HOURS:</b>	TR 8:30am – 9:30am
<b>PEER LEADER:</b>	Aldo Rubio Email: <a href="mailto:arubio15@miners.utep.edu">arubio15@miners.utep.edu</a> Office Hours: TBD
<b>ADVISOR:</b>	Patricia Mendoza <a href="mailto:pamendoza@utep.edu">pamendoza@utep.edu</a>
<b>LIBRARIAN:</b>	Debjani Mukhopadhyay - <a href="mailto:dmukhopadhyay@utep.edu">dmukhopadhyay@utep.edu</a>
<b>TEXT:</b>	Studying Engineering: A Road Map to a Rewarding Career, 4 <sup>th</sup> 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:

- Develop and apply elements of leadership through effective individual participation and meaningful team collaboration.
- Examine your roles and responsibilities crucial for your success in college and beyond.
- Identify, assess, and build on your strengths and experiences to develop academic and transitional strategies necessary for success in your academic, career, and life goals.
- Engage in research and critical thinking activities that demonstrate your ability to effectively integrate your learning within, across, and beyond academic settings
- Engage in campus and community activities to increase your sense of academic and social belonging.

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](mailto:cass@utep.edu) or go to Room 106 Union East Building.

<b>Grading:</b>	3 Exams	60%
	Project and Presentation	20%
	Homework, quiz, class participation, activities and survey	20%

**Project:** The project will be a team design engineering project. Through the project students will develop and apply leadership and team collaboration skills. Throughout the project, students will be given instructions to learn and implement collaboration, communication, and conflict management skills.

**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:** The quizzes will be given at the beginning of the class. No make-up quiz will be given if you are late or absent without valid 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. Students will be introduced to ALL relevant Campus Associations and the benefits of joining them.

**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% -80%.....B  
79% -70%.....C  
69% -60%.....D  
59% - 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 for excessive absences (less than 75% attendance - 8 missed lectures), 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. 20 points will be deducted for each week the assignment is late.
- 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 points will be deducted from your actual grade for missing an exam without valid reason

**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. Jokes, comments of sexual nature, as well as racist comments will not be tolerated. The student that violates this rule will be sent to the Dean of students for disciplinary action.

The instructor reserves the right to make any changes to the syllabus during the term of the semester. Any changes made to the syllabus will be notified to the students by the instructor prior to the lecture week.

I welcome you to a new semester and hope that you will make the effort to learn as much as you can. I know each one of you has the potential to make an A.

**Important Fall 2017 Dates:**

Labor Day – no classes	September 4
Census Day	September 13
Homecoming Week	October 1-7
Freshmen Mid-Terms Grades Available	October 30
Course Drop deadline	November 3
Thanksgiving – no classes	November 23-24
Dead Day	December 8

**Important College of Engineering Dates:**

ACES Ballon Bambucha (Open House)	August 30
Gold Rush	September 6
Career Expo	September 21-22
ACES Bike Rally (Get Ready for Finals)	November 16
Order of the Engineer / Hooding Ceremony	December 16
Engineering and Science EXPO	February 2
National Engineers Week	February 19-22
TCM Celebration - campus-wide Celebration	March 23
Order of the Engineer / Hooding Ceremony	May 12

**Tentative Course Lecture Calendar:**

<b>Date</b>	<b>Class Topic</b>	<b>Readings/Assignments/Activities</b>
8/28 M Week 1	Course purpose and philosophy	<b>Peer Leader Introductory Activity. Team Formations</b> <b>Reading: Ch. 1 (Sections 1-5)</b> <b>Activity: Complete Chapter 1-Problem 4.</b>
8/30 W Week 1	Keys to Success in Engineering Study <i>Linear Equations</i>	<b>Ch. 1 Questions</b> <b>Activity: Complete Chapter 1-Problem 9</b> <b>Win Day One Activity</b>
9/4 M Week 2	No Lecture	<b>Labor Day Holiday</b>
9/6 W Week 2	Keys to Success in Engineering Study (cont.) <i>Linear Equations (cont.);</i>	<b>Text Assign: Ch. 1,</b> <b>Homework - Linear Equations (HW #1)</b> <b>Attend UTEP Gold Rush</b>
9/11 M	<b>Career Services</b>	<b>Team Work: Engineering characteristics &amp; rewards</b>

Week 3	<b>Presentation</b> <i>Linear Equations</i>	<b>Reading Assign: Ch. 2, Sections 1 – 2, 4 - 5</b> <b>Text Assign: Ch. 2, Problems 2 &amp; 15</b>
9/13 W Week 3	The Engineering Profession - What is Engineering, its rewards, and its past?	<b>Reading Assign: Ch. 2, Sections 6 – 8</b> <b>Text Assign: Ch. 2, Problems 23, 29</b>
9/18 M Week 4	The Engineering Profession - Engineering Disciplines & Opportunities - <i>2D vectors</i>	<b>Reading Assign: Ch. 2, Sections 9 -10</b>  <b>Homework – HW #2 – Vector Voyage Summary</b>
9/20 W Week 4	Introduction to UTEP Edge High Impact Practices <i>2D vectors</i>	<b>Reading Assign: Ch. 3, Sections 1- 4</b> <b>Text Assign: Ch. 2, Problem 38 &amp; Reflection Page 67</b> <b>(Journal). See <a href="http://www.discovery-press.com/reflections.htm">www.discovery-press.com/reflections.htm</a>.</b> <b>Attend Career Expo 9/21 &amp; 9/22</b>
9/25 M Week 5	The Teaching/Learning Process; <i>Quadcopter Project</i>	<b>Reading Assign: Ch. 3, Sections 5 – 7</b> <b>Text Assign: Ch. 3, Problems 3 &amp; 6</b> <b>In-Class discussion: Learning styles</b>
9/24 W Week 5	<i>Quadratic Equations;</i> The Teaching/Learning Process (cont.)	<b>Team work on completing and solving quadratic equations Homework – Quadratic Equations (HW #5)</b> <b>STRESS QUEST</b>
<b>10/2 M</b> <b>Week 6</b>	Review for Exam #1	<b>Note: Text Pages 149 - 151 – 5.3 Preparing For and Taking Tests</b> <b>Academic Skills Survey (end of Ch. 3) &amp; Problems 12 &amp; 13 of Ch. 3 (can be handwritten)</b>
10/4 W Week 6	<b>Exam #1</b>	<b>Exam #1 Math Topics: Linear Equations; 2D Vectors; Quadratic Equations; Text Ch. 1 – 3</b>
10/9 M Week 7	Making the Most of How You are Taught <i>Exam 1 Discussion</i>	<b>Reading Assign: Ch. 4, Sections 1 – 5</b> <b>In-class activity: Problem 6</b> <b>Text Assign: Ch. 4, Problems 3 (this class syllabus), 11</b> <b>(note taking) (word process submission)</b>
10/11 W Week 7	Library Visit and Orientation	<b>Reading Assign: Ch. 5, Sections 1 &amp; 2</b> <b>Project Proposals</b>
10/16 M Week 8	Boat Building Cont. <i>Unit Conversions &amp; Prefixes.</i>	<b>Homework - unit conversions (HW #6)</b>
10/18 W Week 8	3D Printing with Tinker CAD	<b>Lecture from Hugo Chavez UGLC 202 ATLAS Lab</b>
10/23 M Week 9	Importance of Academic Advising and Organized Plan of Study	<b>Reading Assign: Ch. 5</b> <b>Homework - Right Triangle Trigonometry (HW #8)</b>
10/25 W Week 9	Making the Learning Process Work for You; <i>Right Triangle Trigonometry</i>	<b>Text Assign: Ch. 5, Problem 3, 4, &amp; 10 (word process submission)</b> <b><i>Right Angle Trigonometry Assignment</i></b>
10/30 M Week 10	Personal Growth & Development (continued)	<b>Text Assign: Ch. 6, Problems 24 &amp; 27 (Word process submission) Group Discussion Ch. 6, Problems 7 &amp; 22</b> <b><i>Project Update</i></b>
11/1 W Week 10	Personal Growth & Development (continued)	<b>Reading Assign: Ch. 6, Sections 7, 8 &amp; 9</b> <b>Text Assign: Ch. 6, Problems 20 &amp; 21 (word process submission)</b>

11/6 M Week 11	Exam #2 Review	Exam #2 Topics – Units & Conversions; Right Triangle Trigonometry; Chapter 4,5,6
11/8 W Week 11	<b>Exam #2</b>	<b>Exam #2: Units &amp; Conversions; Right Triangle Trigonometry Text Ch. 4 – 6</b>
11/13 M Week 12	Introduction to Lean Engineering	<b>Text Assign: Ch. 7, Problem 23 (develop 10 questions for Professor) (word process submission) Motivational Quote that “speaks to You” on notecard</b>
11/15 W Week 12	Laws of Cosines and Sines; Broadening Your Education; Quadcopter Project Discussion	Group Work – Laws of Cosines and Sines; Class Discussion – Ch. 7 Problem 23 informational questions <b>Becoming a World Class Engineer Assignment Attend ACES Bike Rally</b>
11/20 M Week 13	Broadening Your Education; Laws of Cosines and Sines	<b>Reading Assign: Ch. 8, Sections 1-4 Text Assign: Ch. 8, Problem 4, 15 Homework – Laws of Cos and Sine (HW #10)</b>
11/22 W Week 13	Engineering Education Introduction to Technical Writing and Presentation;	<b>Reading Assign: Ch. 8, Sections 4 - 8</b>
11/27 M Week 14	Engineering Research Quadcopter Project	COURI Presentation (pre-professional experience & research): Team preparation for Project presentations
11/29 W Week 14	Exam #3 Review	Exam #3 Topics: Laws of Sines and Cosines; Text Ch. 7 & 8
12/4 M Week 15	<b>Exam #3</b>	<b>Laws of Cosines and Sines; Text Ch. 7 &amp; 8</b>
12/6 W Week 15	Class wrap-up	Team Work: <b>3D Printing Product Build;</b> Discussion on Course
12/11 Week 16	Final Project Presentations Quadcopters	<b>Final Project Report Due, Dec. 7, Quadcopters</b>