

**UNIV 1301 Foundations of Engineering
Course Syllabus, Fall 2017**

UNIV 1301 Seminar/Critical Inquiry - Foundations of Engineering
CRN: 18889 Classroom: *Old Main 205*
Time: **3:00 – 4:20 PM** Days: *Monday and Wednesday (M & W)*

Instructor: Hector Lugo, MSEE **Office Phone #:** 747-7247
e-mail: helugo@utep.edu **Office:** UGLC 226

Office Hours: 12:00 – 2PM M & W. If you cannot meet with me during office hours, please see me after class to set up an appointment at some other convenient time, call me, or e-mail me for an appointment.

Peer Leader: Fatima Garcia **E-mail:** ffgarcia2@miners.utep.edu
Office: UGLC 214 **Office Hours:** 1:00 PM - 2:50 PM Monday

Librarian: Debjani Mukhopadhyay **E-mail:** dmukhopadhyay@utep.edu
Office: LIB 215 **Office Phone:** 747-6715

Academic Advisor: Patricia Mendoza **E-mail:** pamendoza@utep.edu
Office: ENG E226C **Office Phone:** 747-8684

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.

Required Course Text and Materials

1. *Studying Engineering: A Road Map to a Rewarding Career*, 4th Edition, by Raymond B. Landis (2013). Los Angeles: Discovery Press.
2. A 3-ring binder with dividers for readings/handouts, class notes, and assignments
3. A scientific calculator (see below for details)
4. Engineering Paper. Check for this at the university bookstore, office supply store, or at the student chapter of ASCE office, E219.

Learning Environment

Team learning will be used in the classroom whenever it is appropriate. In order for team learning to be successful, each student must come to class prepared to participate. This means that you must complete reading assignments, library or Internet research, writing assignments, surveys, self-assessments, homework, and other assignments **BEFORE** you arrive for class.

Calculator: You will need a simple scientific calculator for this class. Only models of calculators approved for the FE Exam are permitted for use in this class. These include any FX-115 Casio models, all HP 33s and HP 35s models (Hewlett Packard) and all TI-30X or TI-36 models (Texas Instruments).

Homework: Homework is due at the beginning of the class period. Homework is to be turned in before class begins. It should be stapled and flat (do not fold). Late homework will only be accepted (approved) in the case of illness or an emergency; you are responsible for notifying your peer leader or me as soon as possible (before class) of the situation (illness or emergency) necessitating late submission of homework. Most written assignments will be completed using a word processing program (you will be notified when this is required for the assignment). Assignments are to be done in pencil unless stated otherwise.

Attendance: Attendance is mandatory; it is the key to your academic success. If you have two (2) unexcused absences from class, I will give you a warning and ask you to meet with me to discuss your progress in the class and the reason for your absences. Three (3) unexcused absences will result in you being dropped from the course with a **W** up until the drop course deadline of October 28, 2016. After this date, the grade you receive will be an **F**.

Absences for University-recognized activities (such as athletics, band/orchestra, cheerleading, conferences or field trips), religious holy days, or military leave, will be excused only if I am notified before the absence occurs. You are responsible for obtaining notes, handouts, and assignments and for meeting the same deadlines as the rest of the class. There is no make-up for class work that you miss due to an absence unless it was caused by carrying out University business, observing a religious holy day, military leave, or was a professionally documented medical or legal emergency.

One-on-one Meetings: You are required to schedule at least one individual meeting with the instructor and at least one individual meeting with the peer leader during the semester to discuss your progress in the class, and answer any questions you may have in regards to course content, student resources at UTEP or any other school or career-related topics.

Classroom Etiquette: Part of being a professional is being on time and being prepared to do your job. This applies to your career as a student as much as it does to your future career as an engineer. Coming to class late is unprofessional and is very disruptive to the class. You are expected to be in the class and prepared to participate at the scheduled start time. If you are late to class, you are to come in quietly and take your seat. **DO NOT** attempt to turn in assignments; pick up handouts when class is over.

Wireless devices are allowed in the classroom. However, please use professional discretion by shutting them off, or setting them to mute or silent mode before coming to class. Do not answer incoming calls or make outgoing calls except in an emergency. Do not use text messaging or web browser features while in class, unless you are instructed to do so. If you must answer the phone, leave the class discretely. You may return to the class once your call is finished.

The Center for Accommodations and Support Services (CASS): Students with special needs that are registered with CASS are to contact me immediately so that we can work out accommodations for your needs. CASS may be contacted at 747-5148, cass@utep.edu or go to Room 106 Union East Building.

Grading: There will be no curving of grades in this course. The grading scale is:

90 – 100	A	80 – 89	B	70 – 79	C	60 – 69	D	< 60	F
----------	---	---------	---	---------	---	---------	---	------	---

Your grade will be determined by:

Homework & End-of-Course feedback survey	10%
Teamwork/In-class Assignments	10%
Quizzes	10%
Exam I	15%
Exam II	15%
Final Exam	15%
3D Bridge Design Project/Presentation	15%
Essays / Reflection	10 %

Homework & End-Semester Questionnaire: In addition to weekly homework assignments, an end-of-semester assessment (on-line) will be assigned for completion during the last two weeks of the semester.

Quizzes: There will be a quiz at the beginning of every class to provide you regular and immediate feedback on how you are doing in the class.

Teamwork/In-Class Work: There will be several group or team activities throughout the semester for which all individual team members will be graded based upon team cooperation and participation.

Exams: There will be two (2), 1-hour exams and one final exam.

Final Exam Policy: Exemption from final examination may not be given. Final examinations are scheduled to be two hours, forty-five minutes in length and take place during the final examination period. It is the policy of the university not to administer a second final

examination in the course. It is also university policy that students shall not have more than two final examinations in a single day. In the unlikely event that the examination schedule results in a student having three final examinations on a single day, the faculty member upon the request of the student shall reschedule the second of that student's three examinations.

Scholastic Integrity/Academic Honesty - In accordance with University regulations, scholastic dishonesty on a given assignment will be referred to the Dean of Students and may result in a zero on the assignment, an "F" in the course, or even suspension from the university. If you need assistance with your assignments, please consult authorized sources of help. "Plagiarism" is the unattributed use of someone else's work -- a classmate's, a website's, even a teacher's from another course. For more information on Scholastic Dishonesty and/or Plagiarism, consult the Handbook of Operating Procedures: Student Affairs, which is available in the Office of Student Life.

Student Conduct - All students are expected and required to obey federal, state, and local laws, to comply with the Regents' Rules and Regulations, with The University of Texas System and University rules and regulations, with directives issued by an administrative official of the U.T. System or The University of Texas at El Paso in the course of his or her authorized duties, and to observe standards of conduct appropriate for an academic institution.

Tips for Success in this Class:

1. Come to class on time and take notes.
2. Read and study textbook, handouts, and complete reading assignments before class.
3. Visit me and /or your peer leader during office hours if you need assistance, or e-mail me anytime.
4. Finish your assignments early. Ask someone to proofread your work so that you can incorporate any suggestions that they provide for improving your work.
5. Don't cram for examinations; start your success by not falling behind!
6. Take advantage of the peer leader, academic advisor and librarian, office hours, UTEP resources, College of Engineering resources.

Important Fall 2017 Dates:

Labor Day – University Closed	September 4
Mid-term grades	October 30 (e-mailed to freshmen via UTEP e-mail)
Drop Deadline	November 3
Thanksgiving Holiday – no classes	November 23 & 24
Dead Day	December 8
Final Examination	Monday December 11, 1:00PM – 3:45PM
Final Grades	Dec 21

Important UTEP Events:

UTEP Career Expo - September 21 & 22, Don Haskins Center
Engineering Gold Rush - TBA

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

	Date	Class Topics	Activities/Assignments
WEEK 1	8/28 Mon	Syllabus Overview Course Purpose & Philosophy	Mention to attend to UTEP's Sports Games (If you attend a game, write an essay of at least 300 words and show your ticket/picture (selfie) on the event)
	8/30 Wed	Leadership & Success Principles Setting SMART Goals	Small group discussions on definition of <i>engineer</i> Why I Want to be an Engineer essay - DUE 9/1 Show MineTracker MinerPalooza Sept 1st
WEEK 2	9/4 Mon	Defining the Engineer, Engineering Disciplines/Careers MAES/SHPE Presenter Basic Math Review	Quiz Small group discussions on definition of <i>success</i> Fractions and Simplify units Define your SMART Goals - DUE 9/6
	9/6 Wed	Library Research Methods	Math Quiz Attend to Engineering Gold Rush - Write Essay Meeting at the UTEP Library, Rm 204A for workshop and tour
WEEK 3	9/11 Mon	The Engineering Design Process Study Skills & Organization	Quiz Building Teams – Leader, Scientist, Engineer and Data Analyst
	9/13 Wed	UTEP Career Center guest speaker Resume Writing	Quiz Write your own resume - DUE 9/13
WEEK 4	9/18 Mon	Units and Conversion UTEP Engineering History/Legacy	Quiz, General Feedback on Resume's/Dos and Don'ts Unit conversion problems homework - DUE 9/15
	9/20 Wed	Ethics: Personal, Engineering & Professional Office of Student Conduct and Conflict Resolution presenter	In class group reflection on ethics
WEEK 5	9/25 Mon	Grand Challenges for Engineering Linear equations	Math Quiz, grand challenges group reflections Linear equations homework - DUE 9/22
	9/27 Wed	Career Expo at the Don Haskins Center	Employer meet and greet activity - DUE 9/27 Write essay (meet at least 3 guests from your degree/similar degree)
WEEK 6	10/2 Mon	Exam 1 Review	Review of content from first 5 weeks

	10/4 Wed	EXAM #1	Covering several concepts from weeks 1-5 and reviewed on 9/27
--	---------------------	----------------	---

	Date	Class Topics	Activities/Assignments
WEEK 7	10/9 Mon	3D Bridge Design Project specifications overview Quadratic equations	Team assignments/brainstorming for bridge design Quadratic equations homework - DUE 10/6 3D bridge design report DUE – 10/11
	10/11 Wed	Pre-Engineering Compliance Training – Academic Advisor visit	Math Quiz
WEEK 8	10/16 Mon	Computer Aid Design Workshop	3D Design Training (Tinkercad) – Training in the ATLAS lab , Undergraduate Learning Cener, Room 202
	10/18 Wed	Web Design Complex Numbers	Web Design (Wix) Training in the ATLAS Lab , Undergraduate Learning Center, Room 202 Complex Numbers homework - DUE 10/18
WEEK 9	10/23 Mon	Documenting your research/Videography Electronic Com. Etiquette	iMovie Training in the ATLAS Lab , Undergraduate Learning Center, Room 202 3D bridge design 1 st draft DUE
	10/25 Wed	Technical Writing/Research Sinusoids & Harmonic Signals	Math Quiz Sinusoids homework - DUE 10/25
WEEK 10	10/30 Mon	3D Design, Prototyping, and Printing Time Management	Quiz 3D Printing gallery 3D bridge design 2 nd draft DUE
	11/1 Wed	UTEP/CoEN Resources Trigonometry Concepts	Quiz Trigonometry homework - DUE 11/1 3D bridge design video DUE
WEEK 11	11/6 Mon	Computer Basics Project Management	Math Quiz Computer component gallery
	11/8 Wed	Binary Conversion Personal Development	Quiz Binary conversion exercises Binary Homework – DUE 11/8
WEEK 12	11/13 Mon	High Impact Edge Exam 2 Review	Discuss about Internships, Research and Scholarly activities, First year experience, Study Abroad Review of content from weeks 7-11

	11/15 Wed	EXAM 2	Covering content from weeks 7-11 and reviewed on 11/8
--	--------------	---------------	---

	Date	Class Topics	Activities/Assignments
WEEK 13	11/20 Mon	Computer Networking Undergraduate Research Opportunities – (COURI)	Computer networking activity Arduino Project Computer networking homework - DUE 11/17 3D bridge design website DUE
	11/22 Wed	Vectors & Forces Critical Thinking & Problem Solving	Quiz Group work - problem solving exercises Vectors & Forces homework – DUE 11/22
WEEK 14	11/27 Mon	Engineering & the Scientific Method Statics	Scientific Method Group Exercise Statics homework – DUE 11/24
	11/29 Wed	Systems Engineering Electronic Circuits	Math Quiz Electronic Circuits homework - DUE 11/29 3D bridge design presentation DUE
WEEK 15	12/4 Mon	Probability & Statistics Integration Basics	Quiz Integration Basics Homework – DUE 12/1
	12/6 Wed	Review for Final Exam	Focus on topics that need review
	12/8 Fri	DEAD DAY (STUDY)	
	12/11 Mon	FINAL EXAM: Monday December 11, 1:00PM – 3:45PM	

Important Note: Exemption from final examination may not be given. Final examinations are scheduled to be two hours, forty-five minutes in length and take place during the final examination period. It is the policy of the university not to administer a second final examination in the course. It is also university policy that students shall not have more than two final examinations in a single day. In the unlikely event that the examination schedule results in a student having three final examinations on a single day, the faculty member upon the request of the student shall reschedule the second of that student's three examinations.