

# The University of Texas at El Paso

## UNIV 1301 - Foundations of Engineering

Spring 2019

CRN: 27983  
TR: 1:30pm – 2:50pm  
MAIN 211

***Professor & Program Advisor:***

Patricia A. Mendoza  
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Monday 3:30pm-4:30pm,  
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Or by appointment

***Peer Leader:***

Anette Berumen Martinez  
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Office Hours: Tuesday and Friday 12:00pm-1:00pm

***Librarian:***

Debjani Mukhopadhyay  
Office: UTEP Library – Reference, Room 215  
E-mail: [dmukhopadhyay@utep.edu](mailto:dmukhopadhyay@utep.edu)

***Textbook:***

*Studying Engineering: A Road Map to a Rewarding Career*  
4<sup>th</sup> Edition  
By  
Raymond B. Landis, Dean Emeritus  
Published by: Discovery Press, Los Angeles, CA.

***Other materials needed:***

3-ring binder or notebook for class notes and assignments  
Basic Scientific Calculator.

## ***Course Description***

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Foundations of Engineering is a freshman university level course, which is intended to help new engineering students to learn and apply valuable skills that will aid them through their college and future professional life. The objective of UNIV 1301 is to make the transition from high school to the university as comfortable as possible, providing engineering students with all the tools, skills, resources and information needed to be successful, and helping them to consciously decide on their right career profession.

One of the teaching objectives of this course is to help students create a meaningful connection between student life and the real engineering world. Students will explore engineering fields of study and learn about the seven Engineering disciplines offered at UTEP. Moreover, students will develop problem solving, critical thinking, project development and design skills through course materials and activities.

It is also a class objective to familiarize students with learning tools as well as activities and resources available at UTEP. Entering students need to know about all the resources the university offers to be able to successfully handle challenges of student life, complete class assignments, fulfill their degree requirements, and meet their career goals. Students need to be aware of UTEP activities, which will allow them to build strong connections with faculty, staff, and peers.

The plan is to make this class as interactive as possible, helping the students to successfully excel independently and as a part of a team, to improve their communication and presentation skills, and to understand the importance of integrity and ethics, among others. The class material will focus on making real-world connections to engineering by providing hands-on activities along with math-based applications with the objective of increasing student retention, motivation and success in engineering.

By the end of the semester, the students 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.

## ***Course Goals***

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***Goal 1. Develop and apply elements of leadership through effective individual participation and meaningful team collaboration to empower you to be an agent of change.***

Learn more about collaboration, roles, and facilitation skills through faculty instruction and student practice.

- ✓ You will participate in Teamwork exercises where you will be assigned a role, use your skills and abilities to jointly work with your Team Members and achieve the exercise successfully.
- ✓ You will learn to trust, clarify roles, communicate openly and effectively, appreciate diversity of ideas, and balance the Team's Focus.
- ✓ Conducting Self-assessing student's roles during the semester.
- ✓ Conducting individual mid-project team evaluation for each of their teammates.
- ✓ You will have the opportunity to prepare an individual and a team report, and to give an oral presentation about the project.

**Goal 2.** *Examine the roles and responsibilities crucial for your success in college and beyond.*

- ✓ Develop a plan of study by participating in appropriate academic advising.
- ✓ Familiarize yourself with CAP (in Goldmine) and match your classes with career objectives.
- ✓ You will turn in a copy of planned registration schedule (including list of prerequisites), degree plan, and unofficial transcript.
- ✓ You will become familiar with high-impact practices through guest speaker presentations.
- ✓ Researching university rules in the online Student Handbook.
- ✓ You will complete an in-class activity with Choices 360 to clarify your career goals.
- ✓ You will be completing a résumé worksheet and a résumé with STAR statements for an internship you might want to pursue.

**Goal 3.** *Identify, assess, and build on their strengths and experiences to develop academic and transitional strategies necessary for success in their academic, career, and life goals.*

- ✓ You will reflect on your responsibility for and contribution to your own learning.
- ✓ Prepare an essay on why do you wish to become an engineer.
- ✓ Reflect on your own learning as you progress through the semester.
- ✓ Discuss grade goals, midterm progress and just-in-time adjustments needed to achieve those goals.
- ✓ Taking quizzes and participating in-group discussions via Blackboard.
- ✓ Having a conversation with your career advisor

**Goal 4.** *Engage in research and critical thinking activities that demonstrate your ability to effectively integrate your learning within, across, and beyond academic settings.*

Your will reflect on how the research process applies to their learning within, across, and beyond academic settings.

Students will:

- ✓ Work on MATH assignments in and out of class.
- ✓ Be given quizzes and test requiring use their critical thinking and solving skills.
- ✓ Attend the library orientation that will include how to find accurate sources and the ethical way to use them.
- ✓ Completing the library interactive scavenger hunt.
- ✓ Have a research project that will require them to use the library including finding and using books and newspapers in their research.
- ✓ Be required to explore databases to find an abstract from a research article related to their research project. They will need to review the research article to understand how it is different from “popular” articles.
- ✓ Conduct research for their final project. The project will include a written paper, a PowerPoint presentation, and/or a website, video and 3D printing. The instructor monitors their progress by asking students to submit drafts of project paper, timeline and other work that indicates their progress. The final project paper will include an annotated bibliography.
- ✓ Complete an end of the semester reflection essay about their overall experience in the course and their project/team assignments.
- ✓ Be introduced to the ethical definition with a workshop from the Office of Student Conduct and Conflict Resolutions (OSCCR).
- ✓ Learn about ethics through lectures and/or case studies, which will include professional ethics and student ethical behavior as well.

**Goal 5.** *You will engage in campus and community activities to increase their sense of academic and social belonging.*

You will become familiar with the university's student organizations.

Students will:

- ✓ Have presentations from various departments (including engineering) and offices in the university. These will be coordinated by your instructor or peer leader.
- ✓ Attend at least 2 social, cultural or intellectual events and be asked to turn in a short description of the event.
- ✓ Be required to take your written assignment to the Writing Center, have it corrected, and then turn in both the draft with comments and the corrected version together.
- ✓ Attend a one-on-one conference at least once with Instructor and at least once with Peer Leader (this will count as an assignment for credit/grade).
- ✓ Communicate with your Instructor and Peer Leader throughout the semester via email and/or Blackboard.
- ✓ Visit the Library to become familiar with databases, and where resources are located in the library. This orientation will be conducted by the assigned Librarian. This activity will be coordinated by your Instructor or Peer Leader.
- ✓ Attend the compliance presentation and meet with appropriate Academic or Departmental Advisor.
- ✓ Have the Peer Leader as a resource. The Peer Leader will also start each class session with announcements on campus events and opportunities for student involvement.
- ✓ Attend at least one engineering related event such as Gold Rush, TCM, Student Organization meetings and/or activities.

## **UTEP EDGE**

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The UTEP Edge is our philosophy that acknowledges the many assets our students bring to the University. We provide a variety of high-impact experiences both in and out of the classroom through work of our faculty, staff, alumni, and community partners that build on these assets and talents. Many of the assignments and discussions in this class will further develop the talents you bring to this class such as developing your communication skills, teamwork, critical thinking, and problem solving. Participating in experiences such as research, civic engagement, student employment, and study abroad contribute to increasing your confidence, enhancing your personal and professional skills, and equip you with a competitive advantage for when you graduate and enter the workforce or pursue a graduate degree. It is this competitive edge that will prepare you for leadership and lifelong success.

Edge Advantages: Leadership, Problem-solving, Communication, Entrepreneurship, Social responsibility, Confidence, Global Awareness, Teamwork, Critical thinking.

Edge Experiences: Research and scholarly activity, Student employment, Internships, First-year experience, Learning communities, Creative activity, Community engagement, Student leadership, Study abroad/Study away, capstone experience.

## ***Resources and Support***

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Student will receive considerable support during the course. UNIV 1301 will be taught by an instructional team consisting of an instructor who is also a Lower Division-Engineering Program Advisor, a student Peer Leader, and a university librarian.

UTEP resources such as the Library, Writing Center, Math Resource Center, computer labs, Career Services, Counseling Center, and Tutoring Center will be recommended and incorporated for class activities and assignments.

## ***Grading***

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Attendance and class participation – **20%**

Exams, two – **15%**

Project, Research, Presentations, and Reports – **35 %**

Homework, Quizzes, in-class and outside activities, Final Surveys – **20%**

Mentoring (both Professor and Peer Leader) - **10%**

## ***Grading Scale***

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A = 100% - 90%

B = 89% - 80%

C = 79% - 70%

D = 69% - 60%

F = 59% or below.

\*\*\*UNIV 1301 is part of the University Core Curriculum and requires a “C” grade or better in order to fulfill the core requirement and successfully complete the course.

## ***Project***

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Student will have to work on at least **two team-based** projects through the semester, one in-class and one out-of-class, and both will be based in engineering design and team development. There will be no make ups for projects. More information about the projects will be provided later.

## ***Presentation***

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Student will have **at least** two presentations during the semester. Two of those presentations will be about the engineering research and the final engineering Project. These presentations will be team based, and there will be no make ups for those. More information about the presentations will be provided later.

## ***Research***

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There will be at least one research activity included for the class, and this will require the use of the UTEP library and the help of a librarian. At least one of these will be presented during class as a team assignment. More information about research assignments will be provided later.

## ***Homework***

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Students will have two homework assignments as a minimum per week, and these will be based on class lectures and activities.

Homework must be turned in at the beginning of the class, no more than 15 minutes after the class start time. This rule also applies for homework required to be submitted thru Blackboard Shell.

Late homework will **NOT** be accepted. In a case of illness or an emergency, is the student's responsibility to notify the instructor or peer leader as soon as possible (before class preferably) of the conflicting situation. **Validating proof of the illness or emergency** will be required in order to accept late homework submission.

If for any reason the student cannot make it to the class, homework can be emailed to the Professor and Peer Leader **before the class time when this homework is due**. Homework can also be submitted thru Blackboard Shell, but the same due date and time requirements apply. Homework will be considered as late if it is emailed or submitted in Blackboard after the 15 minutes tolerance period provided and it will **NOT** be accepted.

Specific instructions and due dates for assignments will be given either in class or through Blackboard.

## ***Quizzes***

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There will be several quizzes throughout the semester to provide feedback about your performance in class. These quizzes will be counted as in-class activities, and most of these will not be previously announced. There might be situations where Quizzes will have to be completed thru Blackboard Shell. In this case, these will be considered as homework, and these will be announced in advance. There will be **NO** make ups for quizzes.

## ***Exams***

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There will be two exams during the semester, which will focus on lectured material and assignments mostly. **No** retakes for exams will be allowed. In a case of illness or an emergency which might prevent the student from taking the exam, is the student's responsibility to notify the instructor or peer leader as soon as possible (before class preferably) of the situation. Validating proof of the illness or emergency will be required, and professor will provide a new time and date for this exam.

## ***Final Exam***

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There will be **NO** final exam for this class, but the final exam period time will be used for final project presentations. Attendance to final project presentation is mandatory. There will be no possible make up for these presentations after this time. In a case of illness or an emergency which might prevent the student from attending this final presentation, is the student's responsibility to notify the instructor or peer leader as soon as possible (before class preferably) of the situation. Validating proof of the illness or emergency will be required. Professor will provide an "I" (incomplete) grade for the class until the terms for replacing this grade are discussed and completed by the student.

## ***Class Attendance and Participation***

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Class is intended to be interactive and student participation is extremely important. Consider that by only attending class you might already have 20% of your final grade. Moreover, during class time you will be able to contribute in class assignments and activities, which are also part of another 20% of the grading. Unsatisfactory attendance consists of absences, tardiness, leaving classroom early, or coming to class unprepared to participate.

Students must come to class **on time**, and they must be prepared for class material since this is part of your daily homework. Material to be covered on the following class day will be announced. A good understanding of class material and class activities will also help with students' participation.

If a student needs to be absent from a class, he or she needs to notify the Professor and/or Peer Leader by email or phone (no voicemail) prior to class time. It is the student's responsibility to get in contact with the Professor, Peer Leader or classmates for missed lecture material, assignments, handouts or any pending homework.

Documented absences for school related activities, such as traveling with a team for school purposes, will be excused.

Non-emergency medical and dental care, legal matters, court appearances, work hours and interviews are **NOT** excused absences, and should be scheduled outside of class time.

*The student might be dropped after 4 unexcused absences.*

If the instructor is more than fifteen minutes late for class without previous notice or arrangements, class will be dismissed, and this will not count toward absences for the student. If a student arrives more than 15 minutes late to the class, this will count as an absence, and by doing this frequently, the instructor will have the right to deny the student access to that class.

## ***Withdrawal and Dropping the class***

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Not attending classes does constitute official withdrawal, and the professor might drop you from the class. Make sure to talk to the professor if you stopped attending classes and need to be dropped from the course. If a student stops attending the course, this will be taken as absence and the student will receive a grade based on work completed and attendance. *The student might be dropped after 4 unexcused absences.* Students may drop the class and receive a WC before April 5<sup>th</sup>, 2019. After this day, the professor might still be able to drop the student only in cases of medical or family emergencies, but the student will need to contact professor and Peer Leader to make this request and must provide documentation.

## ***Activities***

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There will be in-class and out-of-class activities, which might be individual or group activities. Students must participate in all the activities in order to have the complete grade for these. Moreover, students will be required to attend a couple of UTEP events, which will be announced during the semester. There will be no make up for activities because some of these activities may be based on UTEP events that occur only once a year.

## ***Reports and Format of Written Work***

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There will be a couple of formal reports required as part of research and project activities. These reports and all written assignments done outside of class **must** be typed using black or dark blue ink, 12 point Times New Roman or Calibri font, 1.5 spaced, on white paper. The heading of the paper must appear on the top right-hand side (first page only) and must include below information:

- Full Name:
- Date:
- Class Title:
- Assignment Title:

Make sure to staple or add a clip to your report if this includes more than one sheet of paper. Moreover, for multiple-page reports, add the page number and total of pages to the bottom of each page (ex. Page 2 of 10).

Notes and in-class assignments required to be turned in must be legible and must include the student information on the right top side of the paper as well.

The maximum or minimum length of the document will be specified along with the report requirements.

## ***Final Survey***

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You will be receiving an invitation in your UTEP email to complete the ESP Student Feedback Survey online during the last few weeks of the semester. This is a **required assignment** and will count towards your final grade; make sure to complete it. ESP Department will only notify me when you have completed the survey, but they will not display your responses.

## ***Mentoring***

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During the semester, you will be meeting at least once with the instructional team (instructor and peer leader). An additional meeting may be required to discuss academic progress and to explore options for improvement. These meeting will count towards 10% of your final grade. Date and times for these mentoring meeting will be discussed later during the semester.

## ***UTEP E-mail Account and Blackboard***

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Student will need to have his/her UTEP email account and Blackboard account ready at the beginning of the semester. Class and assignment information will be provided thru Blackboard Shell and/or thru your email, and it is the student's responsibility to check his/her UTEP email account and Blackboard at least twice during the day. **NO** emails from personal email accounts will be accepted, and all emails for this class will require "UNIV 1301 Spring 2019" on the *subject field*, unless sent thru Blackboard Shell.

This will be a technologically enhanced course using Blackboard. If you need assistance with Blackboard, please contact the Help Desk. There will be several Blackboard discussions, quizzes and assignments throughout the semester. Requirements will be clearly specified and posted along with each assignment. Make sure to log in to Blackboard shell frequently due that all class announcements will be posted there, although these might be also copied to your UTEP email.



### ***Cell Phone and Electronic Devices***

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Use of cell phones, smart watch or any electronic devices will be **prohibited** during class. Cell phones should be in silence mode or turned off before the class start. Use of cell phones or smart watches during class is disrespectful to the professor and classmates, and might distract them from lecture and activities. If a student is found using his or her cell phone or smart watch, or if cell phone is ringing during class, the student might be asked to leave the class and will **not** be allowed to come back until next class. Moreover, this will be considered an absence.

Use of web browser features during class time either on cell phones, smart watch, tablets or laptops will **not** be allowed in class unless the professor requires it and such use is related to class material.

Hand-writing notes are encouraged during class as part of the class objectives.

### ***Students with disabilities***

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Center for Accommodations and Support Services Policy: If you have or suspect a disability and need an accommodation, you should contact the Center for Accommodations and Support Services (CASS) at 747-5148, or at [cass@utep.edu](mailto:cass@utep.edu), or go to Room 106 Union East Building.

### ***Copyright Statement***

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Some of the materials in this course are copyrighted. Violation of US copyright law can result in civil damages up to \$100,000 for each work copied. Copying of textbooks is not “fair use” under the Copyright Act. The “fair use doctrine” only permits non-commercial copying of part (in general, not more than 10%) of a copyrighted work. Do not bring a copied textbook to this class. Your cooperation is expected.

### ***Student Conduct***

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Academic dishonesty and discourteous behavior will **NOT** be tolerated.

Students must submit their own work. If a student is found to be cheating or plagiarizing, he or she will be subject to a disciplinary action, per the UTEP catalog policy: (<http://catalog.utep.edu/undergrad/academic-regulations/student-life-policies-and-procedures/>).

Students are also expected to have a courteous behavior during class; they need to be tolerant, to listen and to respect other’s opinions.

Harassment is unacceptable in and outside the classroom. Moreover, racist comments or comments of a sexual nature will **NOT** be accepted or tolerated. In any of these cases, student will be sent to the Dean of Students for disciplinary action.

### ***Syllabus Change Policy***

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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.

## ***Important Spring 2019 Dates***

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- Jan 21<sup>st</sup> – Dr. Martin Luther King, Jr. Holiday – University Closed
- Jan 22<sup>nd</sup> - Spring classes begin
- Jan 22<sup>nd</sup> – 25<sup>th</sup> - Late Registration (Fees are incurred)
- Feb 6<sup>th</sup> – Spring Census Day
- Feb 8<sup>th</sup> – Engineering & Science Career EXPO, 9:00am – 2:00pm, Union Bldg East, 3<sup>rd</sup> Floor
- March – Advising Season Starts, for Summer and Fall 2019
- Mar 18<sup>th</sup> – 22<sup>nd</sup> – Spring Break
- Mar 15<sup>th</sup> - TCM
- Mar 27<sup>th</sup> – Internship & Part-Time Job Fair 2019, 9:00am – 1:00pm, Union Bldg East, 3<sup>rd</sup> Floor
- Mar 29<sup>th</sup> - Cesar Chavez Holiday – No classes
- Apr 5<sup>th</sup> - Spring Drop/Withdrawal Deadline
- May 10<sup>th</sup> – Dead Day
- May 13<sup>th</sup> – 17<sup>th</sup> - Spring Final Exams
- May 16<sup>th</sup> – Thursday - Final Exam for UNIV 1301 Class. Time: 1:00pm – 3:45pm
- May 18<sup>th</sup> – 19<sup>th</sup> - Spring Commencement
- May 22<sup>nd</sup> – Grades are Due
- May 23<sup>rd</sup> – Grades are posted to students records. Students are notified of grades and academic standing

## Course Calendar

The following calendar is a general guide and might be subject to change during the semester.

Week	Day	Topic
Week 1	22-Jan	First Day of Class: "Meet and Greet" in-class project activity. "Intro to Engineering" first project.
		Assignment: Answer survey about your intended degree, your goals, and your class/college expectations.
	24-Jan	Syllabus and getting to know your class. Blackboard overview. Assignment: Students will set class rules. Read Prologue, Ch. 1 and Ch. 2.
Week 2	29-Jan	Career Services Presentation: Crafting an Effective Resume & Cover Letter. Assignment: S.T.A.R. Method Activity. Build your Resume.
	31-Jan	Chapter 2: The Engineering Profession. Intro to the Engineering Disciplines. Assignment: Read Appendix E.
Week 3	5-Feb	Appendix E: Description of the Engineering Disciplines. Resume Due. Assignment: Read Book Prologue and Chapter 1.
		Choices 360. Chapter 1. Keys to Success in Engineering Study.
	7-Feb	Feb 8: Attend Career Expo. Assignment: Complete Library Modules.
Week 4	12-Feb	First Library Visit. Assignment: Complete Library Interactive Scavenger Hunt.
	14-Feb	Fusion 360 and 3DPrinter OS. Design Project. Creating Gantt Charts. Assignment: Create a Gantt Chart for your Final Project for Individual and Teamwork project.
Week 5	19-Feb	Strengths' Finder. Assignment: Read Strengths' Finder book.
	21-Feb	Ch.6. Personal Growth and Student Development. Leadership and Teamwork. Assignment: Activity for Leadership: Understand what a leader is, identify great Leaders.
Week 6	26-Feb	Units and Conversions. Assignment: Homework about Units and Conversions. Attend a "Staying on Track" workshop.
	28-Feb	"Introducing UTEP Edge" Presentation by UTEP Edge. Understanding UTEP Edge and HIP Engagement. Assignment: Research and Identify 3 HIP. Develop a PSA about a HIP.
Week 7	5-Mar	Engineering Info Session by Engineering Academic Advisor. Assignment: Fill your degree Plan. Read Chapter 5.
	7-Mar	Chapter 5. Making the Learning Process Work for you. PSA Presentations. Assignment: Quiz about Ch. 5
Week 8	12-Mar	OSCCR Presentation. PSA Presentations cont. Assignment: Study for Exam.
	14-Mar	<b>Exam 1.</b>
Week 9	19-Mar	<b>Spring Break</b>
	21-Mar	

Week 10	26-Mar	Electronic Communication Etiquette. Chapter 8. Orientation to Engineering Education. Assignment: Homework about Electronic Communication Etiquette.
	28-Mar	Visit 2 to Library: Research Project Preparation. Assignment: Select Research Project Topic and team. Read Ch. 3.
Week 11	2-Apr	Guide for Presentations. Chapter 3. Understanding the Teaching/Learning Process. During this week: Mentoring Students, One-to-One Conversation with Instructor and Peer Leader.
	4-Apr	Basic Trigonometry. <b>April 5th</b> , DROP day line. Assignment: Homework about Basic Trigonometry.
Week 12	9-Apr	Counseling Center Presentation. Assignment: Prepare for Research Presentations. Research Report due.
	11-Apr	Research Project Presentations by class teams. Assignment: Read Ch. 4
Week 13	16-Apr	Wix Presentation. Movie Maker. Assignment: Prepare the Webpage for your UNIV 1301 projects.
	18-Apr	Chapter 4. Making the Most of How You Are Taught. Final Project Due to be 3D printed.
Week 14	23-Apr	SELC & ESLC Presentations. In-Class Assignment: Final Reflection about UTEP Edge, What Changed? Final 3D Project Report Due.
	25-Apr	Couri Presentation. LSAMP Speaker. Assignment: Read Chapter 7. Extra Credit Quiz in Blackboard. Complete your class review.
Week 15	7-May	Global Programs. Ch. 7. Broadening your education. Assignment: Study for Exam.
	9-May	<b>Exam 2.</b>
Week 17	Finals Week	<b>Final Project Presentations</b> <b>Thursday May 16th, 2019, 1:00pm to 3:45pm.</b>