Syllabus ENGR 1201: Introduction to Engineering
Section 020 Tuesdays 11:00 am-1:00 pm
Fall Semester 2017

1: Instructor
   • Dr. Azadeh Bolhari  Phone: 325-486-5508  Email: azadeh.bolhari@angelo.edu
   • Office: West Annex-105 Office Hours: See ASU webpage (T & R 8-9am, 1-2pm)

2: Required materials

3: Prerequisites
   • Pre-Civil Engineering major or department permission

4: Course Description
   The objective of this course is to change your life! If that sounds ambitious to you, you’re right! We hope to change the way you think about things and the way you go about doing things.

   Almost no students enter college as expert learners. Many students graduate without ever becoming expert learners and consequently achieve only a small fraction of the education that is available to them at college. This course will not make you an expert learner. It will introduce you to the skills you will need to become an expert learner. This will require you to change the way you think about things and the way you go about doing things.

   While we are introducing these learning skills to you, you will be learning about the engineering profession and the engineering design process.

5: Course Learning Outcomes
   When you complete this class you should be able to:
   1. Work effectively in teams to accomplish course assignments
   2. Create a personalized curriculum plan to graduate with your engineering degree
   3. Describe the learning process and evaluate your strengths and weaknesses in learning
   4. Follow the engineering design process to solve several engineering challenges
   5. Visit a local engineering firm and prepare a professional site visit report documenting your visit
   6. Apply basic engineering tools to solve simple problems
Course outcome mapping

The mapping of the course outcomes to the program outcomes is shown in Table 1. The program outcomes correspond to the listed ABET Criterion 3 student outcomes (1) through (7).

Table 1. ENGR 1201 course outcome mapping

<table>
<thead>
<tr>
<th>Course Learning Outcomes</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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<tbody>
<tr>
<td>Problem Solving</td>
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<td>Design</td>
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<td>Experimentation</td>
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<tr>
<td>Communication</td>
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<td>I</td>
<td>I</td>
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<tr>
<td>Professional Ethics</td>
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<td>I</td>
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<td>I</td>
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<tr>
<td>Ongoing Learning</td>
<td>I</td>
<td></td>
<td></td>
<td></td>
<td>I</td>
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<td></td>
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<tr>
<td>Teamwork</td>
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<td>I</td>
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</tbody>
</table>

I = Introduce, A = Apply, S = Synthesize

6: Course structure and communication

There will be little or no lecture during class. Instead of in class lectures, we will spend our class time working in groups to accomplish your learning outcomes. You are expected to complete reading material before class. This will give us time in class to work on problems and projects. We will be using Blackboard to communicate during this course. Lesson materials will be delivered via Blackboard and YouTube. Blackboard will be used for announcements and discussion of course materials. Please do not email your instructor with questions about class—instead use Blackboard.

6.1: Calculator policy

The use of a calculator is required and allowed on all exams and quizzes. Computers, tablets, smart phones, I-pads and similar electronics are not allowed on quizzes and tests. Calculators with graphing capabilities will be allowed in the course. Recommended calculators with these capabilities include the HP48, HP49, HP50, TI86, and TI89. However, only calculators currently allowed in the Fundamentals of Engineering (FE) and Professional Engineering (PE) exams will be allowed in exams and quizzes. Please refer to the National Council of Examiners for Engineering and Surveying (NCEES) calculator policy for the list of acceptable calculators (http://ncees.org/exams/calculator-policy/).

6.2: Professionalism

One of the goals of this course is to teach students about professionalism, including the standards and expected behavior of your chosen profession. With this in mind, students are expected to demonstrate a behavior consistent with the conduct of an individual practicing in the engineering profession. Students are expected to: (1) come prepared for class; (2) respect faculty and peers; (3) demonstrate responsibility and accountability for your own actions; (4) sensitivity and appreciation for diverse cultures, backgrounds, and life experiences; (5) offer and accepts constructive criticism in a productive manner; (6) demonstrate an attitude that fosters professional behavior among peers and faculty; (7) be
punctual to class meetings; (8) maintain a good work ethic and integrity; and (9) recognize the classroom as a professional workplace.

7: Graded Material

7.1: Class Attendance, Participation, Timeliness and Teamwork

The number one complaint of engineering clients is the timeliness of deliverables (reports, drawings, specifications, etc). As a professional engineer you will be expected to arrive at scheduled meetings on time and prepared. Late proposals are not accepted. Late specifications or drawings may cost the engineer money. Professional engineering standards apply in this course.

You are expected to meet every class meeting on time and prepared. Attendance will be taken. Arriving late or leaving early will be counted as an absence. Should you find it necessary to miss a class for any reason, you are expected to notify your instructor as early as the absence is known—preferably before the absence. Blackboard will be the main forum for communicating with your instructor and fellow students. One purpose of the discussions is to inform your instructor about any open questions from the reading or other material. It’s important that you provide feedback to your instructor. Unless otherwise specified, assignments are due at the beginning of the class period on the specified due date.

Nearly all-worthwhile accomplishments from raising a family to landing a rover on Mars are the work of teams. Engineering is no exception. All significant engineering projects are completed by teams. You will be assigned to a team during the second week of class. The purposes of the teams are to give you practice working in teams and to provide a support group for you within the class. You are expected to sit with your team during class. There are projects where you must work with your teams.

7.2: Journal

You are to keep a written journal for this class. You are expected to make journal entries at least once a week. Your journals will be graded based on completeness and quality of the entries.

7.3: Homework

Homework will be due nearly every class meeting. These assignments will be made via Blackboard. Your lowest homework grade will be dropped

7.4: World Class Engineering Student (WCES) Design Project

This is the first project of this course. In it you will apply the engineering design process to create a curriculum and plan for you to successfully complete your engineering degree.

7.5: Cardboard Crane Project

Your team will design a cardboard crane through engineering design process.

7.6: Site Visit Report

Your team will visit a professional engineering, architecture, or construction firm in the San Angelo area. Your team will prepare a professional site visit report documenting this visit.

7.7: Water Resources Report

This assignment will challenge you research where San Angelo gets its water from and discuss the future challenges and options to supply needed drinking water.
7.8:  **K’NEX Bridge Design Project**

This is the culminating project for this class. Your team will be challenged to build a K’NEX bridge to meet certain design requirements. Bridges will be tested the last week of class.

7.9:  **Grades: Weighting and Letter Grades**

The following weighting system will be used in determining final grade for the course

<table>
<thead>
<tr>
<th>Item</th>
<th>Points</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class attendance (2 free passes)</td>
<td>100</td>
<td>12.5%</td>
</tr>
<tr>
<td>Journal</td>
<td>100</td>
<td>12.5%</td>
</tr>
<tr>
<td>Homework (lowest grade dropped)</td>
<td>100</td>
<td>12.5%</td>
</tr>
<tr>
<td>WCES project</td>
<td>100</td>
<td>12.5%</td>
</tr>
<tr>
<td>Cardboard Crane Project</td>
<td>100</td>
<td>12.5%</td>
</tr>
<tr>
<td>Site visit report</td>
<td>100</td>
<td>12.5%</td>
</tr>
<tr>
<td>Water resources project report</td>
<td>100</td>
<td>12.5%</td>
</tr>
<tr>
<td>K’NEX Bridge Project</td>
<td>100</td>
<td>12.5%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>800</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

The instructor will determine letter grades for the course using his professional judgment, and the following standards as described in the University Catalog:

A = excellent work   B = good work   C = average work   D = poor work   F = failing work

8:  **Classroom and University Policies and Student Support**

8.1:  **Academic Integrity**

Angelo State University expects its students to maintain complete honesty and integrity in their academic pursuits. Students are responsible for understanding the Academic Honor Code, which is contained in both print and web versions of the Student Handbook.

8.2:  **American Disability Act**

Persons with disabilities which may warrant academic accommodations must contact the Student Life Office, Room 112 University Center, in order to request and to implement academic accommodations.

8.3:  **Religious Holy Day**

A student who intends to observe a religious holy day should make that intention known in writing to the instructor prior to the absence. A student who is absent from classes for the observance of a religious holy day shall be allowed to take an examination or complete an assignment scheduled for that day within a reasonable time after the absence.

9:  **Instructor Prerogative**

This class does not operate under democratic principles. Your instructor may change policies, procedures, of this course when he deems it necessary. You will be notified of any such changes.

10:  **Course Outline**

A general overview of the course will be handed out in class. Detailed assignments and updates will be in Bb.