Engineering 111.001 & 111L.021 – Fall 2019

Foundations of Engineering I

Department of Physics, Engineering and Astronomy, Stephen F. Austin State University

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Office: 207D Ed & Gwen Cole STEM Building  
Phone: 936-468-1512

Office Hours: Monday-Thursday 9-11am, or by appointment

Class Meetings: Monday & Wednesday 1:00 - 2:40 PM, Room STEM 103

Course Home Page: https://D2L.sfasu.edu

Course Description

This course is an introduction to the engineering profession, ethics and disciplines. The course will stress the development of skills in teamwork, problem solving, logic processing, algorithm development, estimation, design, and drawing. There will be an emphasis on computer applications and programming, digital logic, Computer Aided Drafting (CAD) tools, and communication. Topics include Newton's laws, unit conversions, statistics, computers, Excel, basic graphics skills, visualization, and orthographic drawings. Software used: CAD, Windows, Office, and the Internet. (3 semester hours; 2 hours lecture and 2 hours lab per week)

Text and Materials

The text for this course is Thinking Like an Engineer, by Stephan, Bowman, Park, Sill, Ohland, Pearson (3rd Edition). The readings indicated in the Course Outline correspond to chapters from this text and should be read prior to discussion of the material in class. CAD exercises will be provided as PDF files. Homework and handouts will be provided throughout the semester.

Grading Policy

Each major exam will be graded on a 100-point scale. The course grade will be computed as shown below.

\[
\text{Course Average} = (0.60E + 0.25H + 0.15T)
\]

where E = Exam Average  
H = Average of Homework and In-Class Assignments  
T = Average of Team Projects

Letter grades are based on the ranges below.

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<th>Grade</th>
<th>Range</th>
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<td>90.0 - 100</td>
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<td>80.0 - 89.9</td>
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<td>C</td>
<td>70.0 - 79.9</td>
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<td>D</td>
<td>60.0 - 69.9</td>
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<tr>
<td>F</td>
<td>&lt; 60.0</td>
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Attendance Policy

Attendance will be taken at the beginning of class electronically, on paper, or visually. If you have 3 unexcused absences then your final grade will be reduced one letter grade. If you have 4, or more, unexcused absences, you will receive an “F” in the course. A written and signed notice is required for an excused absence within three class days of the absence. To make sure that you are going to arrive to class on time you can set your watch here: http://www.time.gov/. Being late in excess of 15 minutes is considered an absence.

Students who miss class without approval of their instructor will receive a grade of zero on the missed assignment. Authorized absences must be approved by your instructor in advance of the absence, unless you have an emergency or illness. Make-up work must be completed outside of normal class hours within one week following an excused absence. It is your responsibility to see your instructor and make arrangements for make-up work if you have an excused absence.
Course Requirements
On average, for EGR111, students should spend 6 hours, or more, per week working outside of class. This time should be spent reading the textbook, working on homework, working on class projects, or studying.

Exams
There will be four major exams, each covering a limited amount of lecture and text material. The final exam will not be comprehensive. The dates of these exams are listed in the course outline attached to this page. Students will have one week after each exam to review the exams and discuss the grades. No make-up exams will be given except in the case of an excused absence. An official written notice is required for an excused absence within three days of the exam. Any makeup exam must be taken within three days of the missed exam. **Students who make below a 70 on an exam must visit with me before the following exam.**

Homework Assignments
All homework assignments are due at end of day (5pm) on the Friday specified unless otherwise stated. Homework will be electronically submitted for grading via D2L. Furthermore, any hardcopies of the homework should be neatly completed in pencil. Hardcopies of the homework may be requested for evaluation periodically during the semester. No late homework will be accepted unless you have an excused absence. **Failure to submit 3, or more, homework assignments to D2L will result in an “F” in the course.**

Team Grades
The TEAM must insure that all members of the team contribute to and understand the contents of team submissions. All team members who participate in an assignment will receive equal credit for that team submission. A grade of zero will be assigned to any member not signing a team submission. Team grades may include team efforts.

In-Class Assignments
All in class assignments must be completed by the end of the class period. It is the discretion of the individual instructor to grant additional time if deemed necessary.

Email Communication
All official course communication will be made using your SFA Jacks account. You must use your SFA email account for all communications. You will be notified via your SFA Jacks email account about grades and attendance.

It is important to practice good email communications in college courses. Use ”EGR111” in the subject of your email messages. Use complete sentences and capitalization when appropriate. The body of your email messages should begin with your instructor's name and end with your name.

Extra Credit
All students will receive extra credit toward exams for getting involved with Engineering Student Organization (ESO) meetings and projects meetings. Students will receive 2 percentage points per week (13 weeks) that they participate in either organization meeting or project meetings. ESO social events do not count towards extra credit.

Students can also receive extra credit by proposing and completing projects that utilize the Maker Space in the STEM building. The point value of a project will depend on its complexity and will be determined after a project proposal has been submitted. Students can work in groups, but the points awarded will be split evenly among the group members. All projects must be completed by 5pm Wednesday of the last regular week of class.

The maximum extra credit any student can receive for EGR111 during the semester is 20 pts.
Classroom Policies
For the benefit of your fellow students and your instructor, you are expected to practice common courtesy with regard to all course interactions. For example:
- Be considerate toward your classmates and instructor and arrive to class on time.
- Do not leave class early and do not rustle papers in preparation to leave before class is dismissed.
- Avoid classroom distractions. Be attentive in class: stay awake, do not read newspapers, etc.
- If you are late to class or must leave early please inform your instructor in advance (enter or leave quietly, don’t walk across the front of the classroom (use the side aisles) and don’t walk in front of the projector).
- Cell phones, pagers and other communication devices must be turned off during class.
- Play well with others. Be kind and respectful to your fellow students and your teachers.

Academic Integrity (A-9.1)
Academic integrity is a responsibility of all university faculty and students. Faculty members promote academic integrity in multiple ways including instruction on the components of academic honesty, as well as abiding by university policy on penalties for cheating and plagiarism.

Definition of Academic Dishonesty
Academic dishonesty includes both cheating and plagiarism. Cheating includes but is not limited to (1) using or attempting to use unauthorized materials to aid in achieving a better grade on a component of a class; (2) the falsification or invention of any information, including citations, on an assigned exercise; and/or (3) helping or attempting to help another in an act of cheating or plagiarism. Plagiarism is presenting the words or ideas of another person as if they were your own. Examples of plagiarism are (1) submitting an assignment as if it were one’s own work when, in fact, it is at least partly the work of another; (2) submitting a work that has been purchased or otherwise obtained from an Internet source or another source; and (3) incorporating the words or ideas of an author into one’s paper without giving the author due credit.

Please read the complete policy at http://www.sfasu.edu/policies/academic_integrity.asp

Withheld Grades - Semester Grades Policy (A-54)
Ordinarily, at the discretion of the instructor of record and with the approval of the academic chair/director, a grade of WH will be assigned only if the student cannot complete the course work because of unavoidable circumstances. Students must complete the work within one calendar year from the end of the semester in which they receive a WH, or the grade automatically becomes an F. If students register for the same course in future terms the WH will automatically become an F and will be counted as a repeated course for the purpose of computing the grade point average.

Students with Disabilities
To obtain disability related accommodations, alternate formats and/or auxiliary aids, students with disabilities must contact the Office of Disability Services (ODS), Human Services Building, and Room 325, 468-3004 / 468-1004 (TDD) as early as possible in the semester. Once verified, ODS will notify the course instructor and outline the accommodation and/or auxiliary aids to be provided. Failure to request services in a timely manner may delay your accommodations. For additional information, go to http://www.sfasu.edu/disabilityservices/.
Acceptable Student Behavior
Classroom behavior should not interfere with the instructor’s ability to conduct the class or the ability of other students to learn from the instructional program (see the Student Conduct Code, policy D-34.1). Unacceptable or disruptive behavior will not be tolerated. Students who disrupt the learning environment may be asked to leave class and may be subject to judicial, academic or other penalties. This prohibition applies to all instructional forums, including electronic, classroom, labs, discussion groups, field trips, etc. The instructor shall have full discretion over what behavior is appropriate/inappropriate in the classroom. Students who do not attend class regularly or who perform poorly on class projects/exams may be referred to the Early Alert Program. This program provides students with recommendations for resources or other assistance that is available to help SFA students succeed. [http://www.sfasu.edu/policies/student_conduct_code.asp](http://www.sfasu.edu/policies/student_conduct_code.asp)

Program Learning Outcomes (PLO)
Graduates of the program will have:

1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
3. An ability to communicate effectively with a range of audiences
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies

Student Learning Outcomes (SLO)
By the end of the course, a successful student will be able to:

1. Describe the variety of collegiate and career opportunities of an engineering discipline.(PLO-4)
2. Evaluate ethical issues related to engineering; formulate and justify position on these issues.(PLO-4)
3. Demonstrate an ability to function on multidisciplinary teams. (PLO-5)
4. Compose clear and concise oral presentations and written descriptions of experiments and projects. (PLO-3)
5. Identify process variability and measurement uncertainty associated with an experimental procedure, and interpret the validity of experimental results. (PLO-6)
6. Demonstrate the ability to solve problems by using a standardized approach. (PLO-1)
7. State observations in appropriate units and perform conversions when necessary. (PLO-1)
8. Apply principles from the physical sciences to analyze and solve engineering problems. (PLO-1)
9. Convert units for physical and chemical parameters as required for different system of units. (PLO-1)
10. Identify when a quantity is dimensionless. (PLO-1)

General Education Core Curriculum Objectives/Outcomes (EEO)
This course is not included in the general education core curriculum. Therefore, please see the learning outcomes above rather than any Exemplary Educational Objectives (EEOs).
# Engineering 111.001
## Fall 2019

### Tentative

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### EXAM I
- **Chapter 1**: Everyday Engineering
- **Chapter 2**: Ethics
- **Chapter 3**: Design and Teamwork

### EXAM II
- **Chapter 4**: Engineering Communication
- **Chapter 7**: Fundamental Dimension and Base Units

### EXAM III
- **Chapter 5**: Sections 1 - 5
- **Chapter 6**: Problem Solving
- **Chapter 8**: Universal Units

### FINAL EXAM
- **Chapter 9**: Dimensionless Numbers
- **Chapter 10**: Excel Workbooks

Thanksgiving