ENGR 1211 Foundations of Engineering I  
School of Engineering and Computing Sciences  
Spring 2015

A. COURSE INFORMATION

Course number/section: ENGR 1211.001  
Class meeting time: M 8:00-8:50 a.m. (lecture), W 8:00-9:50 a.m. (lab)  
Class location: EN 104 (lecture), EN 104 (lab)  
Course Website: https://bb9.tamucc.edu/

B. INSTRUCTOR INFORMATION

Instructor: Hao Xu  
Office location: EN 313  
Office hours: M 2:00-4:00 p.m., T 2:00-4:00pm., W 2:00-4:00 p.m.  
Telephone: (361) 825-3731  
e-mail: hao.xu@tamucc.edu  
Appointments: Please send an email for making appointment if necessary

C. COURSE DESCRIPTION

Catalog Course Description
Introduction to the engineering profession, ethics and disciplines; development of the skills in teamwork, problem solving and design; other topics include computer applications and programming, visualization, orthographic drawings and CAD tools; introduction to electrical circuits, semiconductor devices, digital logic, signal processing, modern control, communications and their application in systems, Newton’s laws, unit conversion, statistics, Excel, and basic graphic skills.

D. PREREQUISITES AND COREQUISITES

Prerequisites
None.

Corequisites
None.

E. REQUIRED TEXTBOOK(S), READINGS AND SUPPLIES

Required Textbook(s)

Optional Textbook(s) or Other References
Hall, 2014.

Supplies
None.

F. STUDENT LEARNING OUTCOMES AND ASSESSMENT
Assessment is a process used by instructors to help improve learning. Assessment is essential for effective learning because it provides feedback to both students and instructors. A critical step in this process is making clear the course’s student learning outcomes that describe what students are expected to learn to be successful in the course. The student learning outcomes for this course are listed below. By collecting data and sharing it with students on how well they are accomplishing these learning outcomes students can more efficiently and effectively focus their learning efforts. This information can also help instructors identify challenging areas for students and adjust their teaching approach to facilitate learning.

(a) an ability to apply knowledge of mathematics, science, and engineering

(e) an ability to identify, formulate, and solve engineering problems

(i) a recognition of the need for, and an ability to engage in life-long learning

By the end of this course, students should be able to:
1. Describe the roles and responsibilities of engineers and technologists, and what are expected of them.
2. Understand and use experimental and data collection procedures used in the technical laboratory.
3. Analyze and explain experiments and experimental data.
4. Identify and apply the basic principles of and scientific method of problem solving and engineering problem solving.
5. Define professional and ethical responsibilities in the engineering profession
6. Demonstrate an ability to communicate effectively.

G. INSTRUCTIONAL METHODS AND ACTIVITIES
Lab-based lecture will be used in this course. Instructor will engage the lecture materials with practical engineering project closely. Through participating in several interesting engineering projects, students could learn the course knowledge much better.

H. MAJOR COURSE REQUIREMENTS AND GRADING
Your course grade will be determined by your performance in the homework assignments, lab experiments/exercises, quizzes, two exams, and a final exam. The distribution of points is as follows:

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>% of FINAL GRADE</th>
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</thead>
<tbody>
<tr>
<td>Two Mid-Term Exams</td>
<td>30</td>
</tr>
<tr>
<td>Final Exam</td>
<td>25</td>
</tr>
<tr>
<td>Quizzes</td>
<td>5</td>
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<tr>
<td>Homework</td>
<td>30</td>
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<tr>
<td>Lab Reports</td>
<td>10</td>
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</tbody>
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I. COURSE CONTENT/SCHEDULE

The first mid-term exam is scheduled for week 8, and the second in week 12 during scheduled class time. The final exam is comprehensive and as scheduled by the university.

<table>
<thead>
<tr>
<th>DATE (BY DAY OR WEEK)</th>
<th>TOPIC</th>
<th>CHAPTER(S)</th>
<th>ASSIGNMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>01/20</td>
<td>Review of Syllabus; General information</td>
<td>1</td>
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<tr>
<td>01/25</td>
<td>Engineering/Technology Career Choices</td>
<td>1</td>
<td></td>
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<tr>
<td>02/01</td>
<td>Ethics and Professionalism; Engineer expectations, goals</td>
<td>2</td>
<td>Assignment 1</td>
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<tr>
<td>02/08</td>
<td>Solving Engineering Problems (Engineering Problem Solving, Scientific Method); Design and Teamwork</td>
<td>3,6</td>
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<tr>
<td>02/15</td>
<td>Mid-Term 1</td>
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<tr>
<td>02/29</td>
<td>Estimation; Data presentation: Graphs, Charts, Diagrams</td>
<td>5,11</td>
<td>Assignment 2</td>
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<tr>
<td>03/01</td>
<td>Measurement Systems; Geometry and Trigonometry for Engineering Applications</td>
<td>7</td>
<td>Assignment 3</td>
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<tr>
<td>03/07</td>
<td>Universal Units; Dimensionless numbers</td>
<td>8,9</td>
<td>Assignments 4,5</td>
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<tr>
<td>03/09</td>
<td>Mid-Term 1</td>
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<td>03/14</td>
<td>Spring Break (No classes)</td>
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<tr>
<td>03/21</td>
<td>Tools for Engineering Computations: Excel</td>
<td>10</td>
<td>Assignment 6</td>
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<tr>
<td>03/28</td>
<td>Mathematical Models and Systems</td>
<td>12,13</td>
<td>Assignment 7,8</td>
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<tr>
<td>Date</td>
<td>Course</td>
<td>Assignments</td>
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<tr>
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<tr>
<td>04/04</td>
<td>Elementary Statistics</td>
<td>14</td>
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<tr>
<td>04/11</td>
<td>Engineering Tools and Programming</td>
<td>15,16</td>
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<tr>
<td></td>
<td>(Introduction to MATLAB)</td>
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<tr>
<td>04/13</td>
<td>Mid-Term 2</td>
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<tr>
<td>04/18</td>
<td>Engineering Tools and Programming</td>
<td>17,18</td>
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<td></td>
<td>(MATLAB)</td>
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<tr>
<td>04/25</td>
<td>Logic and Conditionals</td>
<td>19</td>
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<td>05/02</td>
<td>Final Review</td>
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<tr>
<td>05/06</td>
<td>Final Exam</td>
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Note: Changes in this course schedule may be necessary and will be announced to the class by the Instructor. The assignments and exams shown are directly related to the Student Learning Outcomes described in Section F.

J. COURSE POLICIES

**Attendance/Tardiness**
Attendance is required since the student will be responsible for all materials that are covered in class. If you miss a class due to unavoidable circumstances, you should copy class notes from another student in the class. Attendance is mandatory for exams and the final exams. Repeated tardiness will not be tolerated.

**Late Work and Make-up Exams**
No makeup exams and late work are allowed without prior permission of the instructor (Very difficult to obtain)

**Cell Phone Use**
Turn off and switch the cell phone to silence mode.

**Laptop Use**
Turn off the personal laptop. During the lecture time, the laptop is not needed. For the lab time, the personal laptop is allowed only when the instructor gives the permission.

**Food in Class**
Eating or drinking is NOT permitted in the classes. Students with food or drink will be asked to discard them, or leave the room.

K. COLLEGE AND UNIVERSITY POLICIES

- **Academic Integrity (University)**
  University students are expected to conduct themselves in accordance with the highest standards of academic honesty. Academic misconduct for which a student is
subject to penalty includes all forms of cheating, such as illicit possession of examinations or examination materials, falsification, forgery, complicity or plagiarism. (Plagiarism is the presentation of the work of another as one’s own work.) In this class, academic misconduct or complicity in an act of academic misconduct on an assignment or test will result in a failing grade.

- **Classroom/Professional Behavior**
  Texas A&M University-Corpus Christi, as an academic community, requires that each individual respect the needs of others to study and learn in a peaceful atmosphere. Under Article III of the Student Code of Conduct, classroom behavior that interferes with either (a) the instructor’s ability to conduct the class or (b) the ability of other students to profit from the instructional program may be considered a breach of the peace and is subject to disciplinary sanction outlined in article VII of the Student Code of Conduct. Students engaging in unacceptable behavior may be instructed to leave the classroom. This prohibition applies to all instructional forums, including classrooms, electronic classrooms, labs, discussion groups, field trips, etc.

- **Statement of Civility**
  Texas A&M University-Corpus Christi has a diverse student population that represents the population of the state. Our goal is to provide you with a high quality educational experience that is free from repression. You are responsible for following the rules of the University, city, state and federal government. We expect that you will behave in a manner that is dignified, respectful and courteous to all people, regardless of sex, ethnic/racial origin, religious background, sexual orientation or disability. Behaviors that infringe on the rights of another individual will not be tolerated.

- **Deadline for Dropping a Course with a Grade of W (University)**
  The grade of W will be assigned to any student officially dropping a course. Please consult with the instructor before you decide to drop to be sure it is the best thing to do. Just stopping attendance and participation WILL NOT automatically result in your being dropped from the class. Should dropping the course be the best course of action, visit the Office of the University Registrar for the Course Drop Form that must submitted. No student is eligible to receive a W without completing the official drop process by this deadline. Please consult the Academic Calendar (http://www.tamucc.edu/academics/calendar/) for the last day to drop a course.

- **Grade Appeals (College of Science and Engineering)**
  As stated in University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures, a student who believes that he or she has not been held to appropriate academic standards as outlined in the class syllabus, equitable evaluation procedures, or appropriate grading, may appeal the final grade given in the course. The burden of proof is upon the student to demonstrate the appropriateness of the appeal. A student with a complaint about a grade is encouraged to first discuss the matter with the instructor. For complete details, including the responsibilities of the parties involved in the process and the number of days allowed for completing the steps in the process, see University Procedure
13.02.99.C2.01, Student Grade Appeal Procedures. These documents are accessible through the University Rules website at http://www.tamucc.edu/provost/university_rules/index.html, and the College of Science and Engineering Grade Appeals webpage at http://sci.tamucc.edu/students/GradeAppeal.html. For assistance and/or guidance in the grade appeal process, students may contact the chair or director of the appropriate department or school, the Office of the College of Science and Engineering Dean, or the Office of the Provost.

- **Disability Services**
  The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please call (361) 825-5816 or visit Disability Services in Corpus Christi Hall 116.

  If you are a returning veteran and are experiencing cognitive and/or physical access issues in the classroom or on campus, please contact the Disability Services office for assistance at (361) 825-5816.

  [http://disabilityservices.tamucc.edu/](http://disabilityservices.tamucc.edu/)

- **Statement of Academic Continuity**
  In the event of an unforeseen adverse event, such as a major hurricane and classes could not be held on the campus of Texas A&M University–Corpus Christi; this course would continue through the use of Blackboard and/or email. In addition, the syllabus and class activities may be modified to allow continuation of the course. Ideally, University facilities (i.e., emails, web sites, and Blackboard) will be operational within two days of the closing of the physical campus. However, students need to make certain that the course instructor has a primary and a secondary means of contacting each student.

**GENERAL DISCLAIMER**
I reserve the right to modify the information, schedule, assignments, deadlines, and course policies in this syllabus if and when necessary. I will announce such changes in a timely manner during regularly scheduled lecture periods.