Foundations of Engineering I – ENGR 1211-004
Department of Engineering
Fall 2016

A. COURSE INFORMATION

Course number/section: ENGR-1211_004
Class meeting time: LEC: 5:30 P.M. to 6:20 P.M. R, LAB: 5:00 P.M. to 6:50 P.M. T
Class location: LEC EN 108, LAB EN 316
Course Website: https://bb9.tamucc.edu/webapps/portal/frameset.jsp, then go to the appropriate course section

B. INSTRUCTOR INFORMATION

Instructor: Ronald J. Carlson
Office location: EN 219
Office hours: M 8:00 to 10:00, W 8:00 to 9:00, F 10:00 to 12:00
Telephone: (361) 825-3272
e-mail: ronald.carlson@tamucc.edu
Appointments: email, call, or visit with instructor to make an appointment

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, communications and their application in systems, Newton’s laws, unit conversion, statistics, Excel, and basic graphic skills.

D. PREREQUISITES AND COREQUISITES

Prerequisites
None

E. REQUIRED TEXTBOOK(S), READINGS AND SUPPLIES

Required Textbook(s)

Optional Textbook(s) or Other References
Students will use online resources to supplement the textbook.

Supplies
A calculator

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.

1. Describe the roles and responsibilities of engineers, and what are expected of them
2. Understand and use experimental and data collection procedures used in the technical laboratory
3. Analyze 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. Analyze ethical issues in case studies
7. Use hardware and software tools to solve basic engineering problems
8. Demonstrate an ability to communicate effectively
9. Apply dimensional analysis techniques
10. Analyze processes using histograms and statistical process control techniques

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.

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.

MAJOR COURSE REQUIREMENTS AND GRADING

The comprehension of the material by the students will be measured by the following table.

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>% of FINAL GRADE</th>
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<tbody>
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Grades will be assigned using the following scale:
A: 100-90, B: 89-80, C: 79-70, D: 69-60, and F: 59-0.

G. COURSE CONTENT/SCHEDULE

Homework will be as assigned. Last day to drop a class is June 17. Labs will be conducted to teach rudimentary machining skills. According to the calendar, there are no holidays during this session.

<table>
<thead>
<tr>
<th>DATE (BY DAY OR WEEK)</th>
<th>TOPIC</th>
<th>CHAPTER(S)</th>
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</thead>
<tbody>
<tr>
<td>8/22</td>
<td>Review of Syllabus; General information Engineering/Technology Career Choices</td>
<td>1</td>
</tr>
<tr>
<td>8/29</td>
<td>Ethics and Professionalism; Engineer expectations, goals</td>
<td>2</td>
</tr>
<tr>
<td>9/5</td>
<td>Solving Engineering Problems (Engineering Problem Solving, Scientific Method); Design and Teamwork</td>
<td>3</td>
</tr>
<tr>
<td>9/12</td>
<td>Engineering Communication;</td>
<td>4</td>
</tr>
<tr>
<td>9/19</td>
<td>Estimation; Engineering Notation - Prefix</td>
<td>5</td>
</tr>
<tr>
<td>9/26</td>
<td>Measurement Systems; Unit Conversion</td>
<td>7</td>
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<tr>
<td>10/3</td>
<td>Universal Units – Force (Statics Problem), Weight, Density, Temperature</td>
<td>8, Exam 1</td>
</tr>
<tr>
<td>10/10</td>
<td>Universal Units – Energy, Power Electrical Concepts</td>
<td>8</td>
</tr>
<tr>
<td>10/17</td>
<td>Tools for Engineering Computations: Excel</td>
<td>10</td>
</tr>
<tr>
<td>10/24</td>
<td>Plots and Interpreting Plots</td>
<td>11</td>
</tr>
<tr>
<td>10/31</td>
<td>Mathematical Models and Systems</td>
<td>12</td>
</tr>
<tr>
<td>11/7</td>
<td>Mathematical Models and Systems</td>
<td>12, Exam 2</td>
</tr>
<tr>
<td>11/14</td>
<td>Elementary Statistics</td>
<td>14</td>
</tr>
<tr>
<td>11/21</td>
<td>No Class Scheduled</td>
<td></td>
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<tr>
<td>11/28</td>
<td>Engineering Tools and Programming (Introduction to MATLAB)</td>
<td>15, 16</td>
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12/5  |    Review    |
12/8  |  Final Exam @ 4:30 to 7:00 P.M. |

Note: Changes in this course schedule may be necessary and will be announced to the class by the Instructor.

Exam 1, & 2 Dates are tentatively given within that week, not necessarily on Monday. Exact day of Exam is given one week in advance. No exam makeup is given unless for legitimate cause (a scheduled vacation, wedding, or airline flight is not a legitimate cause).

A. NOTE1: Labor Day Holiday 9/5 – No classes
B. NOTE2: Last day to drop a class 11/11
C. NOTE3: Reading Days 11/22-11/23 – No classes
D. NOTE4: Campus is closed for Thanksgiving, 11/26-11/27
E. The assignments and exams shown are directly related to the Student Learning Outcomes described in Section F

F. COURSE POLICIES

Attendance/Tardiness
Attendance will greatly benefit the student’s comprehension of the material. Tardiness is discouraged as it is disruptive and inconsiderate.

Late Work and Make-up Exams
Late work and make-up exams are at the discretion of the professor. Communicate the need for make-up work as quickly as is possible, preferably prior to class.

Extra Credit
There may be extra credit on the exams. There will not be any extra credit for lab reports or homework.

Cell Phone Use
Cell phone use is prohibited during class time unless you have a family emergency. Cell phone may be used, with permission, during lab time. Students are encouraged to take pictures during labs to help document their work.

Laptop Use
Laptops may be used by students that purchased the text book as an ebook.

Food in Class
Food and drinks are not allowed in the class room.

Missed Exam
Missed exams may be made up at the professor’s discretion.

Participation
Participation is mandatory during the lab portion of the class. During the lecture portion, participation will help retain any information disseminated.

Others
Taking notes will improve retention of the material. Taking pictures of lecture notes is of little benefit.

G. COLLEGE AND UNIVERSITY POLICIES

- **Academic Integrity/Plagiarism (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)**
  I hope that you never find it necessary to drop this or any other class. However, events can sometimes occur that make dropping a course necessary or wise. Please consult with me before you decide to drop to be sure it is the best thing to do. Should dropping the course be the best course of action, you must initiate the process to drop the course by going to the Student Services Center and filling out a course drop form. Just stopping attendance and participation WILL NOT automatically result in your being dropped from the class. November 11 is the last day to drop a class with an automatic grade of “W” this term.

- **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](http://www.tamucc.edu/provost/university_rules/index.html), and the College of Science and Engineering Grade Appeals webpage ([http://sci.tamucc.edu/students/GradeAppeal.html](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 Accommodations**
  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 or visit Disability Services at (361) 825-5816 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.

- **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.

- [Other important policies]

**H. OTHER INFORMATION**

- **Academic Advising**
  The College of Science & Engineering requires that students meet with an Academic Advisor as soon as they are ready to declare a major. The Academic Advisor will set up a degree plan, which must be signed by the student, a faculty mentor, and the department chair. Meetings are by appointment only; advisors do not take walk-ins. Please call or stop by the Advising Center to
check availability and schedule an appointment. The College’s Academic Advising Center is located in Center for Instruction 350 or can be reached at (361) 825-3928.

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.