Foundations of Engineering II
ENGR1312
Department of Engineering
Spring 2016

A. COURSE INFORMATION

Course number/section: ENGR-1312.003/203
Class meeting time: TR 11:00-12:50
Class location: EN316
Course Website: https://bb9.tamucc.edu/

B. INSTRUCTOR INFORMATION

Instructor: Ronald Carlson
Office location: EN219
Office hours: MW 9:00 to 11:00 AM, F 9:00 – 10:00 AM
Telephone: 361-825-3272
e-mail: ronald.carlson@tamucc.edu
Appointments: send an e-mail request with proposed times

C. COURSE DESCRIPTION

Catalog Course Description
Topics include, depending on the major: emphasis on computer applications and programming and solids modeling using CAD tools or other software; fundamentals of engineering science; advanced graphic skills. Prerequisites:

Extended Course Description
This course will be geared toward communicating effectively through the use of graphical design. The use of 2D and a some 3D drawing will be used for this objective. Learning how to use the CAD software presented (AutoCAD/Inventor) is important, but the need to follow appropriate principals and standards is of greater importance. The course covers the following topics: introduction to engineering graphics design, 2D/3D visualization; geometric construction; graphical projection, sketching, & dimensioning. A project is assign for students to apply the graphical drawing techniques typical of industry for mechanical drawings.

More advance courses will use what you have learned in this class to further your mechanical engineering knowledge. Also, this knowledge has a direct impact on industry in general.

D. PREREQUISITES AND COREQUISITES

Prerequisites
ENGR 1211 - Foundations of Engineering I

Corequisites: None
E. REQUIRED TEXTBOOK(S), READINGS AND SUPPLIES


Optional Textbook(s) or Other References

Website: https://bb9.tamucc.edu . This will be used primarily for student interface with information and assignments. Check it daily !!!!

Supplies

Not required, but beneficial: Small Ruler, 30/60/90 triangle

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.

By the end of this course, students should be able to:

1. Understand and apply the Mechanical Drawing Process on assignments and exams.
2. Use projections, pictorials, orthographic, auxiliary views, and sectional views.
3. Apply drawing standards as is: dimensioning, tolerancing, and geometric tolerances.
4. Develop drawing skills using 2D CAD software.
5. Develop drawing skills using 3D CAD software.
6. Effective communication through the development of technical drawings and proper presentation of a design project.

G. INSTRUCTIONAL METHODS AND ACTIVITIES

The book is a good source for focus learning so we go over book examples, and then I work on an example usually from the end of the chapter exercises either on the board and/or computer. After this, you are to work on an exercise and/or homework on your own or group. You will be tested on it with quizzes and exams.
Assignments
Lab work will be assigned every week as related to the topics in class. They are to be worked during the lab time and are usually due at the end of lab session; therefore attendance is essential. Late assignments will NOT be accepted; if you have a special circumstance let me know without delay. In the event that you prove (after seeking different sources of help, including instructor) to have difficulty with an assignment, an extension may be obtained from instructor.

Projects
A project will be assigned during the semester. Detail information will be presented and discussed during the semester.

H. MAJOR COURSE REQUIREMENTS AND GRADING

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>% of FINAL GRADE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exams (2)</td>
<td>20 each</td>
</tr>
<tr>
<td>Lab Reports</td>
<td>0 Note: You must have a passing grade for your Labs to pass the course</td>
</tr>
<tr>
<td>Homework &amp; Quizzes</td>
<td>20</td>
</tr>
<tr>
<td>Project</td>
<td>10</td>
</tr>
<tr>
<td>Attendance</td>
<td>5 (An absence after the first one will cost you 1% of your total grade)</td>
</tr>
<tr>
<td>Final Exam</td>
<td>25 (It will include a Written, AutoCAD, and Inventor parts.)</td>
</tr>
</tbody>
</table>

Tentative grade breakdown.
# TENTATIVE WEEKLY SCHEDULE (subject to change)*

<table>
<thead>
<tr>
<th>WK</th>
<th>Week of</th>
<th>Readings</th>
<th>Topics</th>
<th>LAB</th>
<th>Exams</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Jan 21</td>
<td>Ch1, 2</td>
<td>Introduction to CAD</td>
<td>Fundamentals</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Jan 26</td>
<td>Ch1, 2</td>
<td>Introduction to CAD</td>
<td>Fundamentals of construction</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ch3</td>
<td>Advanced commands</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Ch4</td>
<td>Sketching</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Feb 2</td>
<td>Ch3</td>
<td>Advanced commands</td>
<td>ACAD Exercise</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ch4</td>
<td>Sketching</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Feb 9</td>
<td>Ch5</td>
<td>Orthographic Views</td>
<td>ACAD Exercise</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Feb 16</td>
<td>Ch6/7</td>
<td>Orthographic &amp; Sectional Views/Aux View</td>
<td>ACAD Exercise</td>
<td>MID 1</td>
</tr>
<tr>
<td>6</td>
<td>Feb 23</td>
<td>Ch7/12</td>
<td>Working Drawings/Aux Views</td>
<td>ACAD Exercise</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Project proposals due</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Mar 1</td>
<td>Ch8</td>
<td>Dimensioning</td>
<td>ACAD Exercise</td>
<td>Start 2D Project</td>
</tr>
<tr>
<td>8</td>
<td>Mar 8</td>
<td>Ch8</td>
<td>Dimensioning</td>
<td>ACAD Exercise</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Mar 15</td>
<td>Ch9</td>
<td>Tolerancing</td>
<td>ACAD Exercise</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Mar 22</td>
<td>------</td>
<td>Exam/Project</td>
<td>ACAD Ex/Work on Project</td>
<td>MID 2</td>
</tr>
<tr>
<td>11</td>
<td>Mar 29</td>
<td>Ch10</td>
<td>Geometric Tolerances</td>
<td>ACAD Exercise</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2D Project Due – Start 3D Proj.</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Apr 5</td>
<td>Ch14,15</td>
<td>3D Fundamentals</td>
<td>3D Exercise</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Apr 12</td>
<td>Inventor</td>
<td>3D Fundamentals</td>
<td>3D Ex/Work on Project</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Apr 19</td>
<td>Inventor</td>
<td>3D Fundamentals</td>
<td>Inventor Features – Student Presentation (3 to 6min)</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Apr 28</td>
<td></td>
<td>3D Fundamentals</td>
<td>3D Project Due</td>
<td></td>
</tr>
</tbody>
</table>

*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).

**NOTE1:** Last day to drop a class April 8  
**NOTE2:** No holiday closings  
**NOTE3:** The assignments and exams shown are directly related to the Student Learning Outcomes described in Section F.

### J. COURSE POLICIES

#### Attendance/Tardiness

Absences are discouraging and detrimental to learning and to your grade. However, it is the
student’s responsibility to obtain class notes, handout materials, etc. when a scheduled lecture is missed. Grading for Attendance will be deducted after the first absence. Starting with the second absence a 1% deduction will apply. If you accumulate 6 absences you have a zero (half a letter grade) for this grading category.

Late Work and Make-up Exams
Late work, scheduled exam absences or No-show on lab/project will not be accepted unless there exists legitimate excuses (illness, death in the immediate family, etc.) and adequate documentation is furnished. If a make-up were to be needed it could be a degree higher in difficulty.

Extra Credit(tentative)

**Course Folder – worth up to 2% added to final grade.**

This consists of a simple letter size two pocket folder where all graded and returned assignments will be placed. On the left side place Exams (1 & 2) followed by Quizzes (1 to ?), then HW (1 to ?). On the right side place first your labs (1 to ?) followed by anything else that was graded like Project. It must be complete and organized for full credit. Other extra credit to be announced in class as needed.

Cell Phone Use
Cell phone use is prohibited once class begins. They are to be silenced and put away where they are not seen. If a call is expected take it out of the class. Anyone that interrupts class due to cell phone will be asked to leave.

Laptop Use
May be permitted if used for class work.

Food in Class
No food or drinks permitted. Only bottled water with a cap or sellable lid. Failure to comply will result in the student being asked to leave to correct the issue.

Missed Exam
You will receive a zero for a missed exam, unless you have accommodations with Instructor or have a legitimate excuse. You are to communicate any issues immediately.

Participation
To be announced in class when extra points are given.

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.

L. **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.