

## **Engr 1201: Introduction to Engineering**

(Sec. 01 3841: MW 8:00 am – 8:55 am, Science Building, Room 214)

### **Syllabus – Fall 2009**

Instructor: Dr. April K. Andreas  
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Department Website: <http://www.mclennan.edu/departments/engr/>

Course Website: <http://www.cleverfred.com/mcc/>

In case the school has to close due to inclement weather, please visit the school website for up to date official information at <http://www.mclennan.edu/>.

**Catalog Description:** Defines the role of the engineer in a technologically expanding society by examining the historical development and current practices of the profession. Covers technical areas including solution and presentation of engineering problems and computational methods with emphasis on use of the graphing calculator and introduction to the computer.

**Course Aims:** This course aims to help you answer the question, “Do I want to be an engineer?” and to help you prepare to be successful academically and professionally in the engineering field.

**Prerequisites:** High school math and physical science.

**Required Textbook:** *Engineering Your Future: A Brief Introduction to Engineering*, Oakes, Leone, Gunn, 3<sup>rd</sup> edition, 2008

**Office Hours.** Unless announced otherwise, my office hours will be Monday through Thursday from 1:15 pm to 2:30 pm. You can also make an appointment to meet with me at another particular time, and are also welcome to drop by my office without an appointment. I do leave campus shortly after 2:30 pm every day, but I don't have class at all on Fridays, so that is usually a great day to come by.

#### **Special Meetings.**

- **Monday, August 31** we will meet in the library in LTC 318.
- **Wednesday, September 2** we will meet in the computer lab in SB 131.

**Math Lab.** Any student enrolled in this class has free access to the Math Lab, located in HPE 218. The Math Lab offers the following services:

- Computerized tutorials for each math course from Arithmetic and Prealgebra through College Algebra and Trigonometry, as well as Contemporary Liberal Arts Mathematics.
- Videos for all courses from Basic College Mathematics through Precalculus and Statistics, and for selected topics in Calculus and other subjects.
- Workshops on specific topics, which can be arranged for groups upon request.

Hours of operation are usually Monday – Thursday 8:00 am – 7:30 pm and Friday 8:00 am – 2:00 pm. Call (254) 299-8809 to confirm for particular days.

**Writing Center.** Any student enrolled in this class also has free access to the Writing Center, located in SC 222. Assessment 1 requires that you visit the writing center for assistance writing your resume. The Writing Center offers the following:

- Help with class essays, research papers, academic writing, letter writing, and resumes
- Word processing help

Call (254) 299-8356 to confirm when the center is open. Additional information is also available at <http://www.mclennan.edu/wc/>.

**Computer Lab.** The Computer Lab, located in AS 114, provides students with access to computers (PC and Mac), printers, scanners, and software to meet their educational requirements. Printing is available at a cost of 8 cents per page, payable with the HighlanderOne card. Fall Hours: Monday – Thursday: 8:00 am to 9:00 pm, Friday: 8:00 am to 5:00 pm, Saturday: 9:00 am to 1:00 pm. <http://www.mclennan.edu/departments/cis/>

**Attendance.** Attendance is mandatory. The class roll will be checked every day. No absences are “excused,” with the exception of religious holy days as defined by the MCC attendance policy. ***Per MCC policy, you will be automatically dropped after missing 20% of class meetings, or 6 classes.*** If the student is dropped before the official drop date, the student will receive a grade of W. If the student is dropped after the official drop date, the student will only receive a grade of W if the student is passing. Otherwise, the student will receive a grade of F.

**ADA Statement.** “In accordance with the requirements of the Americans with Disabilities Act (ADA), and the regulations published by the United States Department of Justice 28 C.F.R. 35.107(a), MCC’s designated ADA co-coordinators, Mr. Gene Gooch - Vice President, Finance and Administration and Dr. Santos Martinez – Vice President, Student Services shall be responsible for coordinating the College’s efforts to comply with and carry out its responsibilities under ADA. Students with disabilities requiring physical, classroom, or testing accommodations should contact Mr. Marcus Sweatt, Disabilities Specialist, at 299-8122 or [msweatt@mclennan.edu](mailto:msweatt@mclennan.edu).”

**Six Drop Rule.** Students who enroll at MCC as entering freshman or first-time college students during the fall 2007 semester or any subsequent semester may not drop more than six courses. The six-course limit does not apply to students who were enrolled in college courses prior to the fall 2007 semester. Students who have completed a baccalaureate degree at any accredited public or private institution are not subject to the six-course limit. The six course limit includes courses taken at MCC or any other Texas public institution of higher education. If a seventh drop is attempted, the student and instructor will be informed that the student must remain in the course and the student will receive a grade of A, B, C, D, F or 1. He/she will not be able to receive a W or withdrawal grade and will not be due a refund of tuition and fees. All courses dropped after the semester census date are included in the six-course limit unless (1) the student withdraws from all courses or (2) the drop is an approved drop exemption.

**Field Trip.** There will be an *optional* field trip to *Space Exploration Technologies* (SpaceX) in McGregor at a date to be announced. Students are responsible for their own transportation to and from the facility. Details will be discussed in class as the date approaches.

## Grading Policy

<b>Standard Points</b>	
Attendance	140
Homework	260
Assessment 1	200
Assessment 2	200
Assessment 3	200
<b>Total Points</b>	<b>1000</b>

<b>Bonus Points</b>	
Locate Office	20
Midterm Conference	20
Notebook Check 1	20
Notebook Check 2	20
Notebook Check 3	20
<b>Total Bonus</b>	<b>100</b>

**Total Possible Points = 1000 + 100 = 1100**

**A: 900+      B: 800 – 899      C: 700 – 799      D: 600 – 699      F: 0 – 599**

**Attendance.** You will receive 5 points for every day you attend class. There are 28 total classes, for a total maximum attendance grade of 140. If you have any “excused” absences, please let me know in advance, so that I can make an appropriate adjustment to that grade. If you come in late (after I take attendance) and come see me after class, you will receive 2 points for attendance.

**Homework.** There will be 26 homework assignments, worth 10 points each. All assignments are available on the Blackboard system and are organized by unit. In general, most assignments are due the next class period after they are assigned. The table on the next page indicates the due dates for each assignment.

In the spirit of preparing you for collegiate and professional success, we will try to incorporate technology as much as possible into this class. As such, most homework should be turned in online through Blackboard. There are some assignments, however, that require drawing or equations which may be either scanned and provided as an attachment in Blackboard, or may be brought to class. Finally, some assignments will be completed entirely in class.

In the case that Blackboard breaks down, all homework assignments and assessments can be accessed on the course website listed at the top of the first page of the syllabus. Work that would normally be turned in via Blackboard should be typed out in a Word Processor, printed, and turned into class the day it is due. Click the Current Classes link, and then click the Daily Assignments or Assessments links to access those materials. **Even if Blackboard isn't working, you are still responsible to turn in all assignments and assessments on time!**

**Assessments.** There will be three assessments. The first assessment will be completed entirely outside of class, the second assessment will be completed in class on Monday, Nov 11, and the third assessment will be completed on the final exam day, which is Monday, Dec 7.

### Homework Due Dates

Homework	Turn In ...	Due Date
1	On Blackboard	Wed, Aug 26
2	On Blackboard or in class	Mon, Aug 31
3	On Blackboard	Wed, Sep 2
4	On Blackboard and in class	Wed, Sep 9
5	On Blackboard	Mon, Sep 14
6	On Blackboard	Wed, Sep 16
7	On Blackboard	Mon, Sep 21
8	On Blackboard	Wed, Sep 23
9	On Blackboard	Mon, Sep 28
10	On Blackboard	Wed, Sep 30
11	On Blackboard	Mon, Oct 5
12	On Blackboard or in class	Wed, Oct 7
13	On Blackboard	Mon, Oct 12
14	On Blackboard	Wed, Oct 14
15	On Blackboard or in class	Mon, Oct 19
16	On Blackboard or in class	Wed, Oct 21
17	On Blackboard or in class	Mon, Oct 26
18	In Class	<b><u>Mon, Oct 26</u></b>
19	On Blackboard or in class	Mon, Nov 2
20	On Blackboard or in class	Wed, Nov 4
21	In Class	<b><u>Wed, Nov 4</u></b>
22	In Class	<b><u>Mon, Nov 9</u></b>
23	On Blackboard or in class	Wed, Nov 18
24	On Blackboard	Mon, Nov 23
25	In Class	<b><u>Mon, Nov 23</u></b>
26	On Blackboard	Wed, Dec 2

**Bonus Points.** You will have the opportunity to increase your grade by completing various tasks throughout the semester that are aimed to help you learn college success strategies. None of these tasks are required, and they do not provide enough extra points that you can actually skip any major assignment, but they can potentially help push your score up a letter grade.

*Locate Office.* You must find my office and sign the door before 2:30 pm on **Friday, September 4.** (If I am there you are certainly welcome to talk to me!)

*Midterm Conference.* Some time between September 21 and November 20, make an appointment with me to discuss how things are going in the class.

*Notebook Checks.* A critical success factor in college is organization. Bring your notebook to class. It should include all notes, handouts, and previous assessments. Notes should be in date order. There should be a page on the front where you are keeping track of assignments, due dates, and grades. You should use dividers to divide your notes by unit.

*Notebook Check 1:* Monday, October 12

*Notebook Check 2:* Wednesday, November 11

*Notebook Check 3:* Wednesday, December 2

**Formatting Requirements.** All assignments (homework or assessments) must be typed, with the exception of worksheets that explicitly state that the work may be completed on that worksheet. I will not grade anything written out by hand, except for equations, which may be written in ink (more details on this are below).

A major complaint of employers about engineering graduates is that many are unable to express themselves in writing. As such, anything submitted for a grade should be written in complete sentences. I will grade for grammar and spelling as well as content.

You should learn how to create a table in a document, since some assignments will require a table. If you need to draw any graphs, you can draw those on an 8.5 x 11 sheet of white paper (not notebook paper), and use a colored pencil or crayon to add color if necessary. Also, if you need to write any equations (there won't be many of these), you can either use a tool such as equation editor or leave space in your document and write the equation in ink after printing.

For example, in this document, I want to include a copy of the Pythagorean Theorem. Since I know how to use Equation Editor, I can write this as  $a^2 + b^2 = c^2$ . Alternatively, typing out the quadratic equation is a little more daunting,

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

so I left some space in my document and I've written it in, in ink, after the fact.

**Makeup Policy and Late Assignments.** Late assignments will not be accepted. Ever. If you have to miss class on the day that an assessment or homework assignment is due, you must turn in the assignment early. Note that failing to complete an assessment on time (resulting in a grade of 0 on that assessment) will have a dramatically negative effect on your grade. We have only two in-class assessments, on November 11 and December 7. If you will miss an in-class assessment due to illness or other excused absence as defined by the MCC attendance policy, you must let me know in advance in order to make up the assessment.

**Academic Dishonesty.** Any student that is found guilty of academic dishonesty such as cheating, plagiarism, or collusion, will receive the zero grade on every test or assignment involved. For repeated violations, a guilty student can be assigned a failing grade in this course and can be recommended for suspension from the McLennan Community College District.

**Privacy.** Because of Privacy Laws, I can only discuss your grade with you, in person and in private. I can only discuss grades by e-mail if you e-mail me with your university address.

**Miscellaneous.** Normally, please do not bring your children, friends, or guests to the class. (Please discuss this with me because I do not want you missing class if you cannot make child care arrangements.)

## Course Progression

Not everything we'll be covering in class is in your book; therefore, it is very important that you come to class every day. The schedule is below, with the relevant chapter listed if available.

<b>Unit 1: Getting Started in Engineering</b>	
Mon, Aug 24	Introduction (Chapter 1)
Wed, Aug 26	Types of Engineering (Chapter 2)
Mon, Aug 31	Library and Research Instruction
Wed, Sep 2	Computer Tools for Engineers (Chapter 7)
Wed, Sep 9	A Profile of the Engineering Profession (Chapter 4)
Mon, Sep 14	Profiles of Engineering Jobs
Wed, Sep 16	The Academic Environment
Mon, Sep 21	Success in Academia (Chapter 5)
Wed, Sep 23	Time Management and Extracurricular Activities (Chapter 5)
Mon, Sep 28	Getting a Job in Engineering (Some is in Chapter 10)
Wed, Sep 30	Keeping a Job in Engineering
<b>Unit 2: Essential Engineering Skills</b>	
Mon, Oct 5	Engineering Fundamentals, Day 1
Wed, Oct 7	Engineering Fundamentals, Day 2
Mon, Oct 12	Engineering Fundamentals, Day 3
Wed, Oct 14	Right-Triangles and Solid Geometry
Mon, Oct 19	Trigonometry
Wed, Oct 21	Taking Measurements
Mon, Oct 26	Working in the Lab
Wed, Oct 28	Engineering Drawing (Part 1)
Mon, Nov 2	Engineering Drawing (Part 2)
<b>Unit 3: Solving Problems and Presenting Results</b>	
Wed, Nov 4	Creative Problem Solving (Chapter 6)
Mon, Nov 9	Analytic Problem Solving (Chapter 6)
Wed, Nov 11	<b>In-Class Assessment on Unit 2</b>
Mon, Nov 16	Engineering Design (Chapter 9)
Wed, Nov 18	Oral Communication Skills (Chapter 10)
Mon, Nov 23	Written Communication Skills (Chapter 10)
Mon, Nov 30	Engineering Ethics (Chapter 11)
Wed, Dec 2	Engineering Ethics, Day 2 (Chapter 11)
Mon, Dec 7	Final Exam: 8 am - 10 am
<b>In-Class Assessment on Unit 3</b>	

**I reserve the right to change any term on this syllabus at any time during the semester.**