IE 201 – Elementary Engineering Analysis  
Course Syllabus:  Fall 2012  
Tuesday 2:00 – 4:45 PM  
Ag/IT 211  
Fall 2012

Instructor:  Nilo Tsung  CEng, PE, PhD  
Assistant Professor  
Department of Engineering & Technology

Office Location:  Charles J. Austin Industrial Engineering & Technology Building, Room 204

Office Hours:  Monday/Wednesday  
1:00 – 4:00 PM or by appointment

Office Phone:  903-886-5464  
Office Fax:  903-886-5960  
University Email Address:  Nilo.Tsung@tamuc.edu

COURSE INFORMATION

Materials – Textbooks:


Course Description:

Credit hours: Three (3) semester hours.

Students in this course will study how to conduct engineering analysis using Microsoft Excel.  This course provides beginning engineering students with a strong foundation in problem solving using Excel as the modern day equivalent of the slide rule.

Prerequisite: MATH 2413 (Calculus I)

Student Learning Outcomes:

Upon satisfactory completion of the course, the student will be able to:

1. Understand the history of engineering problem solving.
2. Be familiar with engineering problem solving and decision-making processes.
3. Use Excel’s ribbon, graphing, functions, matrix operations, linear regression, and statistics functions to facilitate engineering problem solving and decision making.
4. Perform sharing data from other programs and iterative solution by using Excel for engineering data analysis and decision making.
5. Conduct macros and user-written functions for Excel for engineering problem solving and decision making.

**COURSE REQUIREMENTS**

**Instructional / Methods / Activities Assessments**

This course will be presented using formats that include lectures and discussions. Student participation in discussion is expected.

**Homework Assignments: 40% of total course grade**

Student Learning Outcomes #1, #2, #3, #4, #5

Problems from the textbook will be assigned at the end of each class. Students will apply the methods taught in this course to solve engineering problems.

Assessment Method: For each assignment, the total points are always 10. Students should solve their homework problems independently although discussion during problem solving is encouraged. In short, copying other’s homework is prohibited. All assignments are due one week from the day they were assigned unless specified otherwise. Late work will not be accepted and a grade of “0” will be assigned, unless prior arrangements are worked out with the instructor. The instructor has the final decision on whether late work will be accepted. Late penalties will be assessed to any approved late work.

**Midterm & Final Exams: 60% of total course grade**

Student Learning Outcome #1, #2, #3, #4, #5

A midterm exam and a final exam will be used to assess a student’s knowledge and skills related to engineering analysis using Excel.

Assessment Method: A midterm exam and a final exam will be conducted. The midterm exam will assess the material / topics covered in the first seven weeks. The final exam will assess the material / topics covered in the second half of the semester. The final exam will NOT be comprehensive. The midterm and final exams will be worth 100 points each. They will each account for 30% of the final grade.

**Grading**

The final course grade will be based upon the following:

**Assessments**

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Homework assignments</td>
<td>40%</td>
</tr>
<tr>
<td>Midterm</td>
<td>30%</td>
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<tr>
<td>Final Exam</td>
<td>30%</td>
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**Grading Scale**
TECHNOLOGY REQUIREMENTS

The following technologies will be required for this course.
- Internet access / connection
- Laptop or desktop computer with Microsoft Excel

COMMUNICATION AND SUPPORT

Interaction with Instructor Statement:
Outside of the classroom, email will be the primary communication tool. Students should communicate with the instructor via email at the address provided in this syllabus. The instructor will communicate with students via email through their myLeo email address.

COURSE AND UNIVERSITY PROCEDURES/POLICIES

Course Specific Procedures:

Academic Dishonesty
Texas A&M University-Commerce will not condone plagiarism in any form. Plagiarism represents disregard for academic standards and is strictly against University policy. Plagiarized work can result in a “0” on a given assignment(s) or an “F” for the course as well as further administrative sanctions permitted under University policy. You may discuss course work and other course materials with fellow students (except during tests), but it is inappropriate to have another student do your course work or provide you with any portion of it.

Guidelines for properly quoting someone else’s writings and the proper citing of sources can be found in the APA Publication Manual. If you do not understand the term “plagiarism”, or if you have difficulty summarizing or documenting sources, contact your professor for assistance.

University Specific Procedures:

ADA Statement
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 have a disability requiring an accommodation, please contact:

Office of Student Disability Resources and Services
Texas A&M University-Commerce
Gee Library 132
Phone (903) 886-5150 or (903) 886-5835
Student Conduct

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. (See Code of Student Conduct from Student Guide Handbook).

Students are expected to attend all class periods and to be prepared for each class. Students are expected to refrain from any disruptive behaviors during class, which includes but is not limited to working on assignments/projects from another course, reading non-course materials, or using the computer for non-class purposes. Cell phones, iPods, and other electronic devices should be turned off during class.
<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Assignment(s)</th>
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</table>
| 1    | - Course introduction  
      - What is engineering analysis  
      - History of methods and tools used for engineering analysis and decision making |   |
| 2    | - Introduction to Excel | Reading: Chapter 1 Assignment: |
| 3    | - Using Excel’s Ribbon | Reading: Chapter 2 Assignment: |
| 4    | - Graphing with Excel | Reading: Chapter 3 Assignment: |
| 5    | - Excel Functions | Reading: Chapter 4 Assignment: |
| 6    | - Matrix Operations in Excel | Reading: Chapter 5 Assignment: |
| 7    | - Linear Regression in Excel | Reading: Chapter 6 Assignment: |
| 8    | - Midterm Exam |   |
| 9    | - Excel’s Statistics Functions | Reading: Chapter 7 Assignment: |
| 10   | - Excel’s Financial Functions: part 1 | Reading: Chapter 8 Assignment: |
| 11   | - Excel’s Financial Functions: part 2 | Reading: Chapter 8 Assignment: |
| 12   | - Iterative Solutions Using Excel: part 1 | Reading: Chapter 9 Assignment: |
| 13   | - Iterative Solution Using Excel: part 2 | Reading: Chapter 9 Assignment: |
| 14   | - Sharing Excel Information with Other Programs | Reading: Chapter 10 Assignment: |
| 15   | - Macro and User-Written Functions for Excel | Reading: Chapter 12 Assignment: |
| 16   | Final Exam |   |