IE –201 Elementary Engineering Analysis
Course Syllabus: Fall 2014
MWF 9:00 – 9:50 AM,   AGIT 211

Instructor: Dr. Andrea Graham
                Assistant Professor
                Department of Engineering & Technology

Office Location: Charles J. Austin Engineering & Technology Building, Room 216

Office Hours: TR 11-1:30pm, W 11:00am – 12:00pm or by appointment

Office Phone: (903) 468-8737

Office Fax: (903) 886-5960 (Inform instructor when a fax is sent)

University Email Address: andrea.graham@tamuc.edu

COURSE INFORMATION

Course Description:

The purpose of this class is to introduce students to the basic fundamentals of how to identify, formulate and analyze problems based on the knowledge of mathematics, science and engineering by using modern computing techniques. Concepts gained will pave the way to more advanced problem framing and selection of appropriate programming computing approaches. Students will solve problems by writing programs in a high-level programming language, a database management system, and an electronic spreadsheet. Prerequisites: Math 2413.

Student Learning Outcomes:

1. Learn to apply knowledge of mathematics, science, and engineering to analyze engineering problems.
2. Learn to identify, formulate, and solve an engineering problem.
3. Learn to implement the computing techniques chosen to solve the problem.

Materials – Textbooks, Readings, Supplementary Readings:

REQUIRED COURSE MATERIALS

   Textbooks:
   1. Cox, J. and Lambert, J. (2010). *Microsoft Access® 2010: Step by Step.*
      Redmond, Washington: Microsoft Press. ISBN: 978-0-7356-2692-8.

2. Dewhurst, S. C. and Stark, K. T. (1995). *Programming in C++* (2nd edition). Englewood Cliffs, New Jersey: Prentice Hall, Inc. ISBN-13: 978-0131827189.

Optional textbook:

Larsen, R. W. (2009). *Engineering with Excel®* (3rd edition). Upper Saddle River, New Jersey: Prentice Hall. ISBN: 0-13-601775-4.

COURSE REQUIREMENTS

Attendance Policy

Every student is expected to attend all classes to acquire the information and knowledge covered in the class. Students themselves are responsible to obtain the materials covered in the classes they have missed. No effort will be made by the instructor to track down missing students and/or assignments.

Homework Assignment Policy

A grade of "0" will be assigned to late assignments, 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.

Grading

The *final course grade* will be based upon the following:

Attendance and class participation: 10%

Homework assignments: 15%

First in-class exam (Microsoft Excel®): 25%

Second in-class exam (Microsoft Access®): 25%

Third in-class exam (C++ programming): 25%

Grading Scale:

A = 90% and above

B = 80% - 89%

C = 70% - 79%

D = 60% - 69%

F = > 60%

Course Specific Procedures:
1. Homework must be turned in at the beginning of the class on the day it is due. Late assignments will not be accepted.
2. As the instructor for this course, I reserve the right to adjust this schedule in any way that serves the educational needs of the students enrolled in this course.

Academic Dishonesty
Texas A&M University-Commerce will not allow plagiarism in any form. The students' course works should be their own. Plagiarism represents disregard for academic standards and is strictly against University policy. If you have a question regarding academic dishonesty and integrity, please talk to the instructor or refer to the *Code* of Student Conduct from Student Guide Handbook.

Student Behavior
All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. Students are expected to be fully compliant with the Code of Student Conduct, defined in the current Student Guidebook.

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.

University Specific Procedures:

Students with Disabilities:
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
Room 132
Phone (903) 886-5150 or (903) 886-5835
Fax (903) 468-8148
StudentDisabilityServices@tamuc.edu

COURSE OUTLINE/CALENDAR		

The following schedule is subject to change

Week No. & Dates (mm/dd – mm/dd)	Weekly Contents	Reading Assignments
1 (8/25-8/29)	• Understand course objectives and policies • Relationship between engineering analysis and computing • Introduction to Excel	• Chapter 1 (Larson)
2 (9/1-9/5)	Labor Day (9/1, Mon.; holiday and no class) • Using Excel's ribbon • Graphing with Excel	• Chapters 2 and 3 (Larson)
3 (9/8-9/12)	• Excel's functions • Excel Pivot Tables	• Chapters 4 and 11(Larson)
4 (9/15-9/19)	• Macros and User-Written functions for Excel	• Chapter 12 (Larson)
5 (9/22-9/26)	• Macros and User-Written functions for Excel **First in-class exam (Excel Spreadsheets)**	• Chapter 12 (Larson)
6 (9/29-10/3)	• Explore an Access 2010 database • Create databases and simple tables • Create simple forms	• Chapters 1, 2, and 3 (Access)
7 (10/6-10/10)	• Display data • Create simple reports	• Chapters 4 and 5 (Access)
8 (10/13-10/17)	• Maintain data integrity • Create custom forms	• Chapters 6 and 7 (Access)
9 (10/20-10/24)	• Create queries	• Chapter 8 (Access)
10 (10/27-1031)	• Create custom reports **Second in-class exam (Access databases)**	• Chapter 9 (Access)
11(11/3-11/7)	• Introduction to C++ • Data types and operations	• Chapters 0 and 1 (C++)
12 (11/10-11/14)	• Procedural programming • Classes	• Chapters 2 and 3 (C++)
13 (11/17-11/21)	• Data abstraction	• Chapter 4 (C++)
14 (11/24-11/28)	• Inheritance Thanksgiving Holidays on 11/27 (Thur.) and 11/28 (Friday) no class	• Chapter 5 (C++)
15 (12/1-12/5)	• Object-oriented programming	• Chapter 6 (C++)
16 (12/8-12/12) Finals week	**Third in-class exam (C++ programming)** Will be held on the date scheduled by the University for the final exam of the class.	