IE 211 – Engineering Probability and Statistics
Course Syllabus: Spring 2015
MW 2:00 – 3:15 PM, AGIT 211

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

Office Location: Charles J. Austin Engineering & Technology Building, Room 216
Office Hours: MWF 10:00am – 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

Materials – Textbooks, Readings, Supplementary Readings:

Textbook Required: Applied Statistics and Probability for Engineers
   Publisher: John Wiley & Sons, Inc.
   ISBN- 978-0-470-05304-1

Course Description:
This course covers the role of statistics in engineering, probability, discrete random variables and probability distributions, continuous random variables and probability distributions, joint probability distributions, random sampling and data description, point estimation of parameters, statistical intervals for a single sample, tests of hypotheses for a single sample. Prerequisites: MATH 192. Corequisites: MATH 192.

Student Learning Outcomes:
After successfully completing this course, students should be able to do the following:
   1. Use statistical methodology and tools in the engineering problem-solving process.
   2. Complete and interpret descriptive statistics using numerical and graphical techniques.
   3. Understand the basic concepts of probability, random variables, probability distribution, and joint probability distribution.
   4. Compute the point estimation of parameters, explain sampling distribution and joint probability distribution.
   5. Construct confidence intervals on parameters for a single sample.
COURSE REQUIREMENTS

Instructional / Methods / Activities Assessments
This course utilizes lectures, assignments (in class and out of class) to assist students in achieving the course learning outcomes. The assessment criteria for the stated student learning outcomes will include assignments, exams, and a final exam.

Grading

The final course grade will be based upon the following:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Quizzes</td>
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<td>Assignments</td>
<td>10%</td>
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<tr>
<td>Exam 1</td>
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<td>Exam 2</td>
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<td>Exam 3</td>
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<tr>
<td>Final Exam</td>
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Grading Scale:

A = 90% and above
B = 80% - 89%
C = 70% - 79%
D = 60% - 69%
F = 0% - 59%

TECHNOLOGY REQUIREMENTS

The following technologies will be required for this class.
- A scientific calculator for exams (one with built-in statistical functions).
- Microsoft Excel
- Minitab (statistical software available in the computer lab)

COURSE AND UNIVERSITY PROCEDURES/POLICIES

Course Specific Procedures:
1. All exams will be given in class. No make-up of an examination will be offered without prior arrangements with the instructor or a valid doctor's excuse. The Final Exam is comprehensive. Students will need a scientific calculator for exams. Use of unauthorized aids on exams will result in a grade of zero.
2. All quizzes, announced and unannounced, will be given in class. No makeup of quizzes will be allowed.
3. Homework must be turned in at the beginning of the class on the day it is due. Late assignments will not be accepted.
4. Students are expected to attend all class periods. Students who do not attend class regularly may find this course to be more challenging than it should be. Students missing more than five class meetings will be assigned a final grade of "F" for the course and will not be allowed to attend any more class meetings.
5. No cell phone use will be allowed during class lecture.
6. 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.

**University Specific Procedures:**

A&M-Commerce will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination and related retaliation on the basis of race, color, religion, sex, national origin, disability, age, genetic information or veteran status. Further, an environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.

**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

<table>
<thead>
<tr>
<th>WEEK</th>
<th>DATES</th>
<th>TOPICS</th>
<th>Reading Assignments</th>
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<tbody>
<tr>
<td>Jan 20</td>
<td></td>
<td>-First day of class:</td>
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</table>
| Week 1 | 1/21  | -Introduction  
- The role of statistics in Engineering | - Read Chp 1 |
| Week 2 | 1/26, 1/28 | - Probability | - Read Chap 2 |
| Week 3 | 2/2, 2/4 | - Probability | - Quiz 1 |
| Week 4 | 2/9, 2/11 | - Probability | |
| Week 5 | 2/16, 2/18 | - Exam 1  
- Discrete random variables and prob. dist. | - Read Chp3 |
| Week 6 | 2/23, 2/25 | - Discrete random variables and prob. dist | - Quiz 2 |
| Week 7 | 3/2, 3/4 | - Discrete random variables and prob. dist. | |
| Week 8 | 3/9, 3/11 | - Discrete random variables and prob. dist.  
- Exam 2 | |
| 3/16-3/20 | Spring Break – NO CLASS | | |
| Week 9 | 3/23, 3/25 | - Continuous random variables and prob. dist. | Read Chp 4 |
| Week 10 | 3/30, 4/1 | - Continuous random variables and prob. dist. | - Quiz 3 |
| Week 11 | 4/6, 4/8 | - Continuous random variables and prob. dist.  
-Joint probability distributions | - Read Chp 5 |
| Week 12 | 4/13, 4/15 | - Joint probability distributions  
- Exam 3 | |
| Week 13 | 4/20, 4/22 | - Descriptive Statistics | Read Chp 6 |
| Week 14 | 4/27, 4/29 | - Sampling distributions and point estimation | - Read Chp 7 
- Quiz 4 |
| Week 15 | 4/4, 4/6 | - Statistical intervals/single sample | - Read Chp 8 |
| Week 16 | 5/11-5/15 | - FINAL EXAM | |