Prerequisites/corequisites: MATH 231 and ELEC 206

Course Description:
Application of the theory of probability and statistics in modeling random phenomena and signals; in the calculation of system responses; and in making estimates, inferences and decisions in the presence of chance and uncertainty. Applications will be studied in areas such as communications, power systems, device modeling, measurements, reliability and quality control.

Instructor:
Professor Siripong Potisuk
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Office hours: 1500 – 1700 TR, 1100 – 1200 MWF. Others by appointment

Class schedule: (Three Credit Hours)
Section 01: 0930 – 1045, TR; Room: GRIMS 328
Section 81: 1715 – 1830, TR; Room: GRIMS 328

Required Text:

References:

Course Webpage: http://faculty.citadel.edu/potisuk

Course Outcomes:
A student who successfully fulfills the course requirements will have demonstrated
1. An appreciation for such issues as the omnipresence of variability, the high value of graphical analysis, and the importance and essentials of statistically designed experiments.
2. A basic understanding of the fundamental ideas for the collection and display of information, descriptive statistics and exploratory data analysis.
3. A basic understanding of elementary probability theory, frequency distributions and sampling.
4. An ability to solve simple probability problems in electrical and computer engineering applications.
5. An ability to perform basic statistical analysis with emphasis on engineering applications.
6. An ability to translate engineering problems into appropriate mathematical statements necessary for statistical analysis through inferential statistical methods.
Grading Policy:

Eleven homework sets (the lowest score will be dropped) 20%
Five quizzes (the lowest score will be dropped) 16%
Two tests 34%
Final Exam (comprehensive) 30%
The following grading system will be adopted as a guideline for assigning a letter grade. This guideline is subject to change depending upon the overall class performance as well.

A : 90 – 100%     B : 80 – 89.9%     C : 70 – 79.9%     D : 60 – 69.9%     F : 0 – 59.9%

Homework:

1) Homework will be assigned on a weekly basis and must be turned in at the beginning of class on the due date. Only neat and legible work will be accepted. Thus, it is recommended that all homework be written in pencil and only on one side of engineering paper. Late homework will incur a 50% penalty and be accepted no later than one week from the due date.
2) Homework will be graded for effort and correctness. Solutions will be distributed in class or uploaded to the course webpage one week after the due date. It is imperative that student periodically check the course webpage for updates and important news pertaining to the class.

Attendance:

Class attendance is mandatory. Student is required to notify the instructor, if possible, in advance should it be necessary to miss a class for any reason and will be responsible for any material missed. Absences in excess of 20% of the class meetings will result in a failing grade for the course. It is noted that the date of the final exam is set by the Registrar’s office and cannot be changed. Unexcused absence from a test or final exam will result in a zero for that test or exam. Excused absence will be granted under extreme circumstances only (guard duty is not considered an extreme circumstance).

Classroom Policy

Classroom environment is an important factor for effective learning. Students are expected to strictly follow certain rules and regulations so as not to create unnecessary distractions and interruptions during class.
1) Food and drinks are strictly prohibited in the classroom.
2) All electronic devices with audible alarms (cell phones, pagers, watches etc.) must be turned off.
3) Students are expected to show up to class on time. Attendance will be called at the beginning of every class, and the results reported via the Citadel’s electronic class absence system.
4) Students are to refrain from talking to other students during class. Extraneous conversation creates noise and diminishes one’s ability to concentrate and pay attention.

Special Accommodations:

Any students requiring special accommodations for learning disabilities should provide the instructor with verifiable written documentation of their needs as early in the semester as possible (i.e., within the first two weeks of the semester). This will ensure that the students have ample opportunity to succeed in their academic pursuits.

Academic Honor Policy:

While it is permissible and recommended to rely on fellow students for assistance outside of classroom, it is not permissible to copy any portion of another student's work and pass it off as your own. Cheating and/or plagiarism in any form will be fully prosecuted under the Citadel honor code.
### Important Dates:
- **Tuesday, September 3rd**: SCCC Drop/Add ends
- **Monday, September 9th**: CGC Drop/Add ends
- **Thursday, October 11th**: Test I
- **Monday, October 14th**: CGC Last day to withdraw with a “W”
- **Wednesday, October 23rd**: Leadership Development day (No SCCC classes, CGC classes held)
- **Tuesday, October 29th**: SCCC Last day to withdraw with a “W”
- **Wednesday, November 23rd**: Leadership Development day (No SCCC classes, CGC classes held)
- **Tuesday, December 9th**: CGC Last Day of Class
- **Wednesday, December 11th**: SCCC Last Day of Class
- **Friday, December 13th**: Final examination, GRIMS 328: 0800 – 1100 (Section 01)
- **TBA**: Final examination, GRIMS 328: 1715 – 2015 (Section 81)

### Lesson Plan:

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Telling the Truth to Students

Based on an article by Stephen Zucker, John Hopkins University, published in the AMS Notices.

I hear it over and over from college professors: “One of the biggest stumbling blocks holding my students back is the mistaken impression that college is simply a continuation of high school.”

It is essential that the difference between high school and college be explained to students early in their coursework.

There are two primary differences between college and high school.

1. In college, learning no longer takes place primarily in the classroom.

2. The student, and not the instructor, is now primarily responsible for how much is learned.

Where does learning take place at a college or university? Think about it. In dorm rooms? The library? Computer labs? Group meetings? In quiet, out-of-the-way places of individual study, reflection, and practice?

Yes, some learning may still take place in the classroom. But the majority must now take place in other environments, especially at the upper division. There simply isn’t time in three hours per week for fifteen weeks to learn even a significant minority of the material that must be mastered in a college course.

So, given point number one, point number two is obvious. The student must now assume primary responsibility for seeing that learning takes place.

From these two primary differences, we can derive four operational postulates for functioning in the college environment.

A New Level of Responsibility: While guided by instructors and advisors, the student is responsible from now on for his or her own education. The student determines how much study time to devote, how much effort to expend, and how much repetition, practice, and review is needed for mastery of the material. The student must periodically self-assess and adjust the amount of time and effort accordingly. The student can not expect the instructor to assign enough, and only enough, reading & homework to facilitate learning and mastery.

New Use of Peer Group: Most students are no longer well above the majority of their classmates, as they were back in high school. This initially might disappoint some high-ego students, but they should realize that this new peer group can contribute significantly to the educational process. These new peers, if properly utilized, can be a powerful tool in achieving a good education.

New Level of Learning: The goal of college is to learn flexibly, so that you can judge what applies in new situations, and be able to use your learning. It is no longer sufficient just to acquire new knowledge, although that will still be expected. You must also learn to apply knowledge & understanding to new situations, situations never encountered before. A good college exam will surprise you by asking for a solution to a problem that has not been demonstrated in the classroom, the textbook, or anywhere else for that matter. It is this new level of learning that gives the college education its worth in the world.

New Roles for the Student and Instructor: In college, the instructor’s role is to guide the students’ learning. It is not to “cover the material”. It is not to “go over everything you need to know”. It is not to show students how to solve all the problems. It is not to teach everything to the student. Teaching in college becomes a cooperative effort between the instructor and the student. Thus, there is a corresponding change in what is expected of the student. Students must recognize that they are now expected to take the initiative. Instructors no longer “hound” students to study, do homework, do extra out-of-class reading, etc. If a student doesn’t take the initiative, then the student doesn’t pass. Discovery, repetition, practice, and mastery move out of the classroom and into the students’ individual purview. A student who recognizes this can truly tailor and optimize the learning process.

By understanding the fundamental differences between high school and college, students can better adjust, take charge of their education, make the best use of their time, and get more for their education investment.