



# THE CITADEL

ELECTRICAL & COMPUTER ENGINEERING

**ELEC 412–01, Applied Probability and Statistics for Engineers**  
**Course Syllabus for Fall 2018**  
**MWF 9:00am – 9:50am, Room: Grimsley 328**

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- Instructor:** Dr. Jason S. Skinner, Grimsley 310, Phone: 843-953-3352  
Email – [jason.skinner@citadel.edu](mailto:jason.skinner@citadel.edu)
- Office Hours:** TR 1pm–5pm and by appointment
- Textbooks:** **Required:** *Probability and Stochastic Processes: A Friendly Introduction for Electrical and Computer Engineers*, 3<sup>rd</sup> Edition, R. Yates and D. Goodman  
**Recommended:** *Schaum's Outline of Probability, Random Variables, and Random Processes*, 3<sup>rd</sup> Edition, H. Hsu; *Schaum's Outline of Probability and Statistics*, 4<sup>th</sup> Edition, J. Schiller, et al.
- Websites:** Professor – <http://www.jason-skinner.com>  
Course – <http://citlearn.blackboard.com>  
CitLearn (Blackboard) will be used to post course information (such as this syllabus), lecture slides and notes, homework assignments, corrections and answers to questions about assignments, and individual grades.
- Prerequisites:** ELEC 206 – Computer Applications for Electrical Engineers  
MATH 231 – Analytic Geometry and Calculus III
- Objective:** This course is designed to introduce engineering students to the concepts and applications of probability, statistics, and random processes in describing, analyzing, and designing systems that involve random phenomena.
- Description:** Applications 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.

**Important Dates:**

Tuesday, August 28 .....SCCC Drop/Add ends  
**Wednesday, September 26 ..... Test 1 (tentative)**  
**Monday, October 22 ..... Test 2 (tentative)**  
Wednesday, October 31 ..... Last Day to Withdraw with grade of “W” for SCCC  
Friday, November 16 ..... Fall Break begins  
Sunday, November 25 ..... Fall Break ends  
**Wednesday, November 28 ..... Test 3 (tentative)**  
Thursday, December 6 ..... SCCC Classes end  
**Wednesday, December 12 @ 8am ..... Final Exam**

**Course Outline:**

Reading	Topics	Time Frame (approx)
Chapter 1	Experiments, Models, and Probabilities	150 minutes
Chapter 2	Sequential Experiments	150 minutes
Chapter 3	Discrete Random Variables	150 minutes
Chapter 4	Continuous Random Variables	300 minutes
<b>Test 1</b>	<b>Chapters 1 – 4</b>	<b>September 26</b>
Chapter 5	Multiple Random Variables	300 minutes
Chapter 6	Probability Models of Derived Random Variables	150 minutes
<b>Test 2</b>	<b>Chapters 5 – 6</b>	<b>October 22</b>
Chapter 7	Conditional Probability Models	150 minutes
Chapter 8	Random Vectors	150 minutes
Chapter 9	Sums of Random Variables	150 minutes
Chapter 10	The Sample Mean	150 minutes
<b>Test 3</b>	<b>Chapters 7 – 10</b>	<b>November 28</b>
Chapter 11	Hypothesis Testing	75 minutes
<b>Final Exam</b>	<b>Chapters 1 – 11</b>	<b>December 12</b>

**Homework:**

Homework will be assigned on Wednesdays and will be collected at the BEGINNING of the class period on the following Wednesday. Exact due dates will be provided on the CitLearn course page, by email, and in class when the homework is assigned. Late homework will be assessed a 20% penalty. Homework will not be accepted after solutions are posted on CitLearn and will be given a zero grade. If you will be absent on the day of an assignment, arrange to have a classmate turn in your work for you. Homework will be graded for correctness, effort, completeness, and neatness (legibility). You may obtain assistance when doing your homework. Copying of homework is not the same as assistance. Your homework is a graded assignment and must be your own work.

**Electronic Communication Devices:**

Electronic devices with communication capability (such as cell phones, tablets, laptops, etc) are not permitted unless permission is given by Dr. Skinner. These devices are not permitted for use during tests under any circumstance.

**Tests:**

There will be three in-class tests and one final exam. **Collaboration is not allowed on tests or final exams.** The final exam will be cumulative. Assigned tests are required. Unless authorized to the contrary by Dr. Skinner, such tests take precedence over all other duties or activities. If you know you will miss an exam, you must let Dr. Skinner know as soon as possible so a make-up exam time can be arranged. Make-up exams will only be given for those students that have made a reasonable attempt to contact Dr. Skinner.

**Grading:** Students will be graded on everything that is required to be turned in. All exams are scheduled well in advance. Due to the potential unfairness of make-up exams, they will only be given in extreme circumstances. Your final grade in the course will be determined as follows:

Homework .....	25%
3 In-Class Tests .....	each 15%
Final Exam .....	30%

The grading scale used in this course is:  
A = 90 - 100, B = 80 - 89, C = 70 - 79, D = 60 - 69, F = 59 or below.

**Attendance:** Attendance is mandatory. Unless circumstances preclude it, it is your responsibility to notify Dr. Skinner of any schedule conflicts or excused absences that will result in your missing class. It is college policy that a grade of F may be awarded to a student if that student misses more than 20% of the course meetings (excused or unexcused). For this course, **9 classes** constitute 20% of the class meetings.

**Classroom Decorum:** No food or drink is permitted in the classrooms of this building. Proper attire is encouraged, and ECE department policy prohibits hats, cutoffs, shorts, tank tops, and feet without socks in class.

**Special Needs** Students currently documented or anticipate being documented as Learning Disabled (LD), as having Attention Deficit Disorder (ADD), or with another condition for which you might need special accommodation during the semester must provide written documentation of the condition and of the accommodation needed to me within two weeks of the semester start. You may then choose, by notifying Dr. Skinner before the start of each exam or assignment, whether you will need any accommodation. Notification after the start of an exam or last minute notification on an assignment will not be accepted. Please Note: To request academic accommodations (for example, a note taker), students must also register with Academic Support/Special Services, 953-1820, located in Thompson Hall. It is the campus office responsible for reviewing documentation provided by students requesting academic accommodations, and for accommodations planning in cooperation with students and instructors, as needed and consistent with course requirements.

**Cheating and Collaborative Work** According to The Citadel’s policies for the preparation of work performed outside the classroom:

All papers, reports, senior essays, theses, or other written work performed outside the classroom for which a grade is received will be the individual’s work and is subject to the limitations imposed by the definition of plagiarism.

According to Webster’s New International Dictionary, 3rd Edition: to plagiarize is defined as ”to steal and pass off as one’s own the ideas or words of another” or to ”present as new and original an idea or product derived from an existing source.”

**CHEATING IN ANY FORM WILL BE FULLY PROSECUTED.**