



# THE CITADEL

ELECTRICAL & COMPUTER ENGINEERING

**ELEC 309-01, Signals and Systems**

**Course Syllabus for Fall 2016**

**MWF 10:00am – 10:50am, Room: Grimsley 328**

- Instructor:** Dr. Jason S. Skinner, Grimsley 310, Phone: 843-953-3352  
Email – [jason.skinner@citadel.edu](mailto:jason.skinner@citadel.edu)
- Office Hours:** MW 1pm-5pm and by appointment
- Textbooks:** **Required:** *Linear Systems and Signals*, 2<sup>nd</sup> Edition, B. P. Lathi  
**Recommended:** *Schaum's Outline of Signals and Systems*, 3<sup>rd</sup> Edition, H. Hsu
- Websites:** Professor – <http://ece.citadel.edu/skinner>  
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 202 – Electric Circuit Analysis II (C or better)  
ELEC 204 – Electrical Laboratory  
ELEC 206 – Computer Applications for Electrical Engineers
- Corequisite:** MATH 335 – Applied Engineering Mathematics II
- Objective:** This course is aimed at the study of techniques used to describe, classify, analyze, and design systems in the time, frequency, and complex domains. Emphasis is placed on the study of linear, time-invariant (LTI) systems. Topics include convolution, Fourier transform methods, Laplace transform methods, and  $z$ -transform methods. Applications to communication systems, signal filtering, and automatic control systems will be discussed.
- Description:** The study of continuous and discrete systems utilizing Laplace and  $z$ -transform theory.

## Important Dates:

Tuesday, August 30 .....SCCC Drop/Add ends  
**Wednesday, September 28** .....**Test 1 (tentative)**  
Wednesday, October 19 ..... Leadership Day (No Classes)  
**Monday, October 24** ..... **Test 2 (tentative)**  
Tuesday, November 1 ..... Last Day to Withdraw with grade of "W" for SCCC  
Friday, November 18 ..... Fall Break begins  
Sunday, November 27 ..... Fall Break ends  
**Wednesday, November 30** ..... **Test 3 (tentative)**  
Wednesday, December 7 ..... SCCC Classes end  
**Monday, December 12 @ 1300** ..... **Final Exam**

**Course Outline:**

Reading	Topics	Time Frame (approx)
Background	Course Overview, Introduction, Review of Complex Analysis	150 minutes
Chapter 1	Time-Domain Analysis of Signals*	150 minutes
Chapters 2 – 3	Signal Operations, Classification of Signals, Elementary Signals Time-Domain Analysis of Systems*	300 minutes
Test 1	Chapters 1 – 3	September 28
Chapters 6 – 9	Frequency-Domain Analysis of Signals*	450 minutes
Chapters 6 – 9	Fourier series, Fourier and inverse Fourier transform Frequency-Domain Analysis of Systems*	150 minutes
Test 2	Chapters 6 – 9	October 24
Chapters 4 – 5	Laplace and $z$ -Domain Analysis of Signals	300 minutes
Chapters 4 – 5	Laplace/ $z$ and inverse Laplace/ $z$ transform, partial-fraction expansions Laplace and $z$ -Domain Analysis of Systems	300 minutes
Test 3	Chapters 4 – 5	November 30
Final Exam	Chapters 1 – 9	December 12

\*Note: Continuous-time and discrete-time are taught “side by side” in each chapter.

**Homework:**

Homework will be assigned at the end of each week. You are expected to work the entire homework; however, you will only be graded significantly on one problem from the homework. Each homework set will be posted to a separate discussion board on CitLearn. One group of two or three students will be assigned for each homework problem. Each student in a group must independently post their own solution to that homework problem on the appropriate discussion board by the beginning of the next class period for up to five points credit.

Other students not assigned to a particular problem may assist those students assigned that particular problem by replying in the appropriate discussion board or thread. Each student may earn up to 1 bonus point per homework assignment for **substantially** assisting another student with their homework through the CitLearn discussion boards.

**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.**