THE CITADEL
ELECTRICAL & COMPUTER ENGINEERING

ELEC 309-81, Signals and Systems
Course Syllabus for Fall 2014
MW 6:45pm – 8:00pm, Room: Grimsley 305

Instructor: Dr. Jason S. Skinner, Grimsley 310, Phone: 843-953-3352
Email - jason.skinner@citadel.edu

Office Hours: MW 1pm-5pm, and by appointment

Textbook: *Schaum's Outline of Signals and Systems*, 3rd Edition, H. Hsu

Websites: Professor - `http://ece.citadel.edu/skinner`
Course - `http://ece.citadel.edu/courses`
The course website 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:

Monday, September 1 ..... Labor Day (No Classes)
Monday, September 8 ..... CGC Drop/Add ends
Monday, October 13 ..... Last Day to Withdraw with grade of "W" for CGC
Wednesday, October 15 (tentative) ..... Test 1
Wednesday, November 12 (tentative) ..... Test 2
Friday, November 21 ..... Fall Break begins
Sunday, November 30 ..... Fall Break ends
Monday, December 8 ..... CGC Classes end
To Be Determined ..... Final Exam

Course Outline:

Reading	Topics	Time Frame (approx)
Appendix D	Course Overview, Introduction, Review of Complex Analysis	150 minutes
Chapters 1–2	Time-Domain Analysis of Signals*	225 minutes
	Signal Operations, Classification of Signals, Elementary Signals	
Chapters 1–2	Time-Domain Analysis of Systems*	225 minutes
	Classification of Systems, System Models	
Test 1	Appendix D, Chapters 1–2	October 15
Chapters 5–6	Frequency-Domain Analysis of Signals*	450 minutes
	Fourier series, Fourier and inverse Fourier transform	
Chapters 5–6	Frequency-Domain Analysis of Systems*	150 minutes
	Fourier analysis of LTI systems, ideal and nonideal filtering	
Test 2	Chapters 5–6	November 12
Chapters 3–4	Laplace and z-Domain Analysis of Signals	300 minutes
	Laplace/z and inverse Laplace/z transform, partial-fraction expansions	
Chapters 3–4	Laplace and z-Domain Analysis of Systems	300 minutes
	Laplace/z analysis of LTI systems, differential/difference representations, poles and zeroes	
Final Exam	Chapters 1 - 6	TBD

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

Homework: Homework will be assigned on each Wednesday and will be collected at the **BEGINNING** of the class period on the following Wednesday. Exact due dates will be provided on the courses website, 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 handed out 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 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.

Quizzes: The date and topic of each quiz will be announced in advance.

Tests: There will be two 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	15%
Quizzes	15%
2 In-Class Tests	each 20%
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, 6 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.