Course Information   Spring 2016

Instructor:	Saibun Tjuatja	Class time and location:
	Office: 504 NH	TTh 2:00 PM – 3:20 PM, Room NH 202
	Phone: 817-272-3974	Office hours for class:
	Email: tjuatja@uta.edu	TTh 3:30 PM – 5:00 PM or by appointment

Objective: The goal of this course is to teach/train you how to model/formulate and solve problems in electrical engineering. Concepts covered in this course include complex analysis, linear algebra, mathematical and computional modeling, computer algorithms, data processing and analysis. The primary software tool for this course is MATLAB.

Course Catalog: Introduction and application of mathematical and algorithmic thinking to solve electrical engineering problems and interpret the results. Analytical, numerical, and graphical analysis, utilization of complex numbers, vectors, matrices, and arrays to represent EE variables and special functions. Transform methods to solve differential and integral equations, linear and nonlinear equations, advanced vector and 3D integral and differential calculus applied to EE problems. Sources of error when using arithmetic operations, data structures, sorting and searching. Problems and numerical examples using MATLAB will be covered during recitation and computer laboratory sessions.

Required Texts: Dennis G. Zill and Patrick D. Shanahan, *Complex Analysis*, 3rd edition, Jones & Barlett Learning, 2015
Steven C. Chapra, *Applied Numerical Methods with MATLAB*, 3rd edition, McGraw-Hill, 2012.

Reference On-line Materials:
http://www.mathworks.com/support/learn-with-matlab-tutorials.html
http://ocw.mit.edu/courses/electrical-engineering-and-computer-science/6-094-introduction-to-matlab-january-iap-2010/lecture-notes/

Reference Text: H. Scott Fogler and Seven E. LeBlanc, *Strategies for Creative Problem Solving*, 2nd Edition, Prentice Hall, 2007.

Prerequisites: Grade C or better in each of CSE 1311, MATH 2326, and MATH 3319

Grading: There will be homeworks, quizzes, projects, and three tests. If you have a question on grading of an assignment or a test, please contact me about your question within one week of the time the grade is received. The <u>tentative</u> weighting and grading scales are shown in the following table.

Weighting of scores		Scale for letter grade	
Homeworks	10%	90—100	A
Diagnostic Exam	5%	80—89.99	B
Average of 3 test scores	50%	70—79.99	C
Projects	35%	60—69.99	D
		<60	F

Tests: All tests will be comprehensive, close book and close notes. You are allowed to bring one sheet of notes (8.5″×11″, both sides.) The use of calculator is allowed in the exam. No make up exam unless approval is obtained prior to the scheduled test date.

Assignments: **You must turn in your own work**, not copied from someone else's. Please write (or print) legibly.

Important Dates:
Diagnostic: February 2, 2016 (T)
Test #1: March 3, 2016 (Th)
Test #2: April 5, 2016 (T)
Test #3: May 5, 2016 (Th)

Lecture Topics (plan): This course will cover topics from Chapter 1 through Chapter 6 of Zill & Shanahan with emphasis on applications in Electrical Engineering; and Part I, Part III, and Chapter 16 of Chapra. Most of the classroom lectures will follow the same sequence of topics as listed in the required textbooks.

-- **N O T E** ---

If you require an accommodation based on disability, I would like to meet with you in the privacy of my office, <u>during the first week of the semester</u>, to make sure you are properly accommodated.

Student Evaluation Of Teaching

Students will be asked to complete instructor/course evaluation forms at the end of the semester.

Americans with Disabilities Act

The University of Texas at Arlington is on record as being committed to both the spirit and letter of federal equal opportunity legislation; reference Public Law 93112-The Rehabilitation Act of 1973 as amended. With the passage of new federal legislation entitled Americans with Disabilities Act - (ADA), pursuant to section 504 of The Rehabilitation Act, there is renewed focus on providing this population with the same opportunities enjoyed by all citizens.

As a faculty member, I am required by law to provide "reasonable accommodation" to students with disabilities, so as not to discriminate on the basis of that disability. Student responsibility primarily rests with informing faculty at the beginning of the semester and in providing authorized documentation through designated administrative channels.

Academic Dishonesty

It is the philosophy of The University of Texas at Arlington that academic dishonesty is a completely unacceptable mode of conduct and will not be tolerated in any form. All persons involved in academic dishonesty will be disciplined in accordance with University regulations and procedures. Discipline may include suspension or expulsion from the University.

"Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts." (Regents' Rules and Regulations, Part One, Chapter VI, Section 3, Subsection 3.2, Subdivision 3.22).

ANY CHEATING WILL RESULT IN SEVERE PENALTIES

Course catalog information on the prerequisites:

CSE 1311 INTRODUCTORY PROGRAMMING FOR ENGINEERS & SCIENTISTS (3-0) An introduction to the computer, to the algorithmic process, and to programming using basic control and data structures. Prerequisite: MATH 1323 (or concurrently).

MATH 2326 CALCULUS III (3-0) Partial differentiation, multiple integrals (with applications), line integrals, Green's Theorem, surface integrals, Stokes' Theorem, divergence theorem. Prerequisite: C or better in MATH 2425 or HONR-SC 2425

MATH 3319 DIFFERENTIAL EQUATIONS & LINEAR ALGEBRA (3-0) Introductory course with emphasis on solution techniques. Ordinary differential equations, vector spaces, linear transformations, matrix/vector algebra, eigenvectors, Laplace Transform, and systems of equations. Math majors will not receive credit for this course. Prerequisite: C or better in MATH 2326 or concurrent enrollment.