

**Course Syllabus**  
EE 4327  
**Spring, 2016**  
**T,Th 2:00 – 3:20 pm**  
**Geoscience, Room 109**

**Instructor:** Prof. Jonathan Bredow

**Office:** Room 522 Nedderman Hall

**Office Hours:** T,Th 3:30-4:30pm, otherwise by appointment.

**Phone:** 817-272-3934

**Mailbox:** Room 549 Nedderman Hall

**Email:** jbredow@uta.edu

**Instructor WWW site:** [www.uta.edu/ee](http://www.uta.edu/ee)

**Course WWW site:** <https://elearn.uta.edu/>

**Required Textbook(s):** Antenna Theory and Design, 3<sup>rd</sup> ed., Warren Stutzman, Gary Thiele, J. Wiley, 2013.

**Reference Materials:** See materials provided on Blackboard.

**Course Description:** Basic theory of antennas with emphasis on design and engineering application.

**Course Learning Goals/Objectives:** Refer to Table 1 at the end of the syllabus

**ABET Outcomes coverage in the course:** Refer to Table 2 at the end of the syllabus

**Attendance Policy:**

**Drop Policy:**

As per University guidelines. See the Registrar's Bulletin or the University Calendar for drop dates.

**Tentative Lecture/Topic Schedule (Course Content) and Specific Course Requirements w/Descriptions:**

Grade Computation:	Exam I, Exam II	each 20%
	Projects (2)	15% each
	Homeworks	10%
	Final Exam	20%

\*Note students must achieve passing score on the lab component to pass the class.

**Policies:** Late homeworks, projects and not showing for exams is inexcuseable with-out approval of instructor prior to due date or exam date.

Jan.	19	Brief Introduction			
"	21	No class			
"	26	Introduction on basics of antennas (Chpts. 1,2)			
"	28	" " " "			
Feb.	2	Simple radiating systems (Chpt. 3)			
"	4	" " " "			
"	9	System applications for antennas (Chpt. 4)			
"	11	Important concepts in EM (Extra material)			
*)"	16	Wire antennas (Chpt. 6)			
"	18	" " " "			
"	23	" " " "			
"	25	Exam 1			
Mar.	1	Broadband antennas (Chpt. 7)			
"	3	" " " "			
**"	8	Array antennas (Chpt. 8)			
"	10	" " " "			
"	15	Spring Break			
"	17	" " " "			
"	22	Array antennas (Chpt. 8)			
"	24	Aperture antennas (Chpt. 9)			
"	29	Exam 2			
"	31	Low Profile Antennas (Chpt. 11)			
Apr.	5	" " " "			
"	7	" " " "			
"	12	Moonbounce and other specialized communication techniques (Extra material)			
"	14	Antenna Measurements (Chpt. 13)			
"	19	" " " "			
"	21	CEM for antennas (Chpt. 14)			
"	26	" " " "			
"	28	" " " "			
May	3	Review			
"	5	" " " "			

Final Exam: Tuesday May 10 2:00 - 4:30 pm

\*Approximate start of project 1

\*\*Approximate start of project 2

**If you require an accommodation based on disability, I would like to meet with you in the privacy of my office, during the first week of the semester, 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.**

**Table 1:** Statements of Course Objectives

Student is expected to demonstrate:	ABET Outcome mapping
Understanding of fundamental parameters of antennas.	e
Understanding of basic analysis for antennas applied to communications and radar.	e
Ability to relate radiate fields to currents on wire antennas.	a
Ability to relate radiated fields to fields in the aperture of the antenna.	a
Understanding of fundamental aspects of broadband versus narrow-band antennas.	c, e
Ability to design simple array and aperture antennas.	a,e
Ability to perform simple measurements of antenna behaviors.	C,k
Ability to design and construct simple antenna structures.	b,c,d,g,i,k
Understanding of modern antenna design and analysis using EM simulatros.	a,b,c,e,i,j

**Table 2: Coverage of ABET outcomes**

<b>ABET Outcome</b>	<b>Primary course component</b>	<b>Weight</b>
<b>(a)</b> an ability to apply knowledge of mathematics, science, and engineering	<b>Exams, Homeworks, Projects</b>	<b>High</b>
<b>(b)</b> an ability to design and construct experiments, as well as to analyze and interpret data	<b>Projects</b>	<b>Moderate</b>
<b>(c)</b> an ability to design system, component, or process to meet desired needs	<b>Exams, Homeworks, Projects,</b>	<b>High</b>
<b>(d)</b> an ability to function on multidisciplinary teams	<b>Projects</b>	<b>Low</b>
<b>(e)</b> an ability to identify, formulate, and solve engineering problems;	<b>Exams, Homeworks, Projects,</b>	<b>High</b>
<b>(f)</b> an understanding of professional and ethical responsibility	<b>Not addressed</b>	<b>Not addressed</b>
<b>(g)</b> an ability to communicate effectively	<b>Projects</b>	<b>Moderate</b>
<b>(h)</b> the broad education necessary to understand the impact of engineering solutions in a global and societal context	<b>Not addressed</b>	<b>Not addressed</b>
<b>(i)</b> a recognition of the need for, and an ability to engage in lifelong learning	<b>Projects</b>	<b>Low</b>
<b>(j)</b> a knowledge of contemporary issues	<b>Homework, Exams</b>	<b>Low</b>
<b>(k)</b> an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice	<b>Projects</b>	<b>High</b>
<b>(l)</b> an ability to apply probability and statistics, including applications appropriate to electrical engineering	<b>Not addressed</b>	<b>Not addressed</b>