

EE4382/EE5306 ANTENNA ENGINEERING/ANTENNA THEORY  
SYLLABUS

<i>Classroom</i>	PSYCH 307 Tuesdays and Thursdays 10:30 – 11:50 AM
<i>Instructor</i>	Dr. Benjamin C. Flores Professor of Electrical Engineering
<i>Office</i>	Engineering A336
<i>Office Hours</i>	MW 3:00 to 4:00 or by appointment (request by e-mail at least a day in advance)
<i>Textbook</i>	Antenna Theory – Analysis and Design by Constantine Balanis, Fourth Edition, Wiley Available as an e-book.
<i>Other</i>	Scientific/Graphics calculator, laptop, access to MATLAB

**LEARNING OUTCOMES.** By the end of the semester, the student will be able to:

- 1) Design a parabolic dish antenna to meet gain and half-power beam width requirements.
- 2) Apply the Friis equation for a satellite communication link.
- 3) Derive, compute and analyze array factors for one-dimensional and two-dimensional arrays.
- 4) Derive, compute and analyze radiation patterns of wire dipoles and corresponding arrays.

**REQUIREMENTS**

- Academic integrity standards will be observed and maintained at all times. Cases of alleged academic dishonesty will be reported to the Dean of Students (OSCCR).
- Class attendance is mandatory. Four unexcused absences will result in a faculty-initiated withdrawal. Each tardy appearance may count as a half absent.
- Participation in classroom teamwork activities is required. Unwillingness to collaborate may result in a letter grade reduction.
- Reports must be turned in at the beginning of the class period on the due date. Late assignments will be penalized with a 10-point deduction per day.
- Students with special accommodations needs must register with CASS at the beginning of the semester. No exceptions.

**FINAL GRADE** will be based on four MATLAB project and one project dedicated to the construction and testing of a helical antenna. All projects will include additional tasks for graduate students. The final grade will be determined as follows:

$$\text{Final Grade} = 0.8 (\text{MATLAB project report average}) + 0.2 (\text{helical antenna design report}).$$

Extra credit may be awarded for submitting an end-of-course binder and demonstrating IEEE or SWE membership.