Course Syllabus

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EEE 6374, Spring 2017

Radio Frequency Circuits and Systems

Instructor

Dr. Joaquin Casanova

NEB 565

jcasa@ufl.edu

When sending email, add [EEE6374] in the subject line.

Class Time and Room

MWF 9 @LAR330

Office Hours

MWF 2-3pm, NEB 513

Class Website

on E-Learning (Sakai) http://elearning.ufl.edu/

Textbooks

My own lecture notes, plus two recommended textbooks:

Recommended: Pozar, Microwave and RF Design of Wireless Systems

Recommended: Razavi, RF Microelectronics, 2/E

Objectives

The course objective is to let students learn:

- Overall picture of RFIC and wireless systems

- RFIC specifications and system specifications

- Transceiver architectures

- How to derive RFIC specifications from wireless communication standards

- Design and simulation of RF transceivers using EDA tools

Click the link to get more information about this course: http://www.lin.ece.ufl.edu/?q=EEE6374

Outline

RF Overview – Definition of RF and FCC Regulations

RF Propagation and Antennas

Wireless Standards, Digital Modulations

RF System-Level Specifications

Noise and Linearity in Receiver

RF Transceiver Architectures – Receiver and Transmitter

RF System Design EDA Tutorial

RFIC Specifications, Case Study

Emerging Applications

Overview of RFIC Technologies, Packaging, and System Integration

RF Testing – Spectrum Analyzer

Grading

Homework/Quiz: 25% (Late submitted homework will not be graded. Random in-class quizzes.)

Exam #1: 25% (2/17)

Exam #2: 25% (4/6)

Final Project: 25% (Assignment will be announced after Exam #1)

No Final Exam.

Exam makeups can only be scheduled before the exam with appropriate justifications and supporting documents.

Points to Letter Grade conversion:

[90, 100] A

[86.67, 90) A-

[83.33, 86.67) B+

[80, 83.33) B

[76.67, 80) B-

[73.33, 76.67) C+

[70, 73.33) C

[66.67, 70) C-

[63.33, 66.67) D+

[60, 63.33) D

[0, 60) F

Note: If the average is below 83.33, the conversion scale will change.

Note: In order to graduate, graduate students must have an overall GPA and an upper-division GPA of 3.0 or better (B or better). Note: a B- average is equivalent to a GPA of 2.67, and therefore, it does not satisfy this graduation requirement. For more information on grades and grading policies, please visit:

http://gradschool.ufl.edu/catalog/current-catalog/catalog-general-regulations.html#grades

Academic Honesty

Follow UF Student Conduct & Honor Code:

https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/

Accommodations for Students with Disabilities

Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation

Important Classroom Rules

Cellular phones, pagers, and other electronic devices that may generate ring tones or sounds must be turned off during the class.

Software Use

All faculty, staff and student of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

Course Summary:

Date	Details

Date	Details	
Wed Jan 11, 2017	HW #1 (https://ufl.instructure.com/courses/336010/assignments/3165519)	due by 4pm
Fri Jan 20, 2017	HW #2 (https://ufl.instructure.com/courses/336010/assignments/3165520)	due by 4pm
Wed Feb 1, 2017	Modulation I (https://ufl.instructure.com/calendar?event_id=519975&include_contexts=course_336010)	12am
Fri Feb 3, 2017	Modulation II (https://ufl.instructure.com/calendar?event_id=519976&include_contexts=course_336010)	12am
	HW #3 (https://ufl.instructure.com/courses/336010/assignments/3165523)	due by 4pm
Mon Feb 6, 2017	Licensed operation I (https://ufl.instructure.com/calendar?event_id=519978&include_contexts=course_336010)	12am
	Multiple Access (https://ufl.instructure.com/calendar?event_id=537027&include_contexts=course_336010)	12am
Wed Feb 8, 2017	Unlicensed operation II (https://ufl.instructure.com/calendar?event_id=530446&include_contexts=course_336010)	12am
Fri Feb 10, 2017	Wireless RAN (https://ufl.instructure.com/calendar?event_id=539512&include_contexts=course_336010)	12am
Mon Feb 13, 2017	ADS (https://ufl.instructure.com/calendar?event_id=530444&include_contexts=course_336010)	12am
Wed Feb 15, 2017	Exam Review (https://ufl.instructure.com/calendar?event_id=519982&include_contexts=course_336010)	12am
Fri Feb 17, 2017	Exam #1 (https://ufl.instructure.com/courses/336010/assignments/3165527)	due by 4pm
Mon Feb 20, 2017	Exam recap (https://ufl.instructure.com/calendar?event_id=538826&include_contexts=course_336010)	12am
	Noise I (https://ufl.instructure.com/calendar?event_id=530449&include_contexts=course_336010)	12am
Wed Feb 22, 2017	Noise II (https://ufl.instructure.com/calendar?event_id=530450&include_contexts=course_336010)	12am
Fri Feb 24, 2017	Antenna noise (https://ufl.instructure.com/calendar?event_id=530453&include_contexts=course_336010)	12am
	HW #4 (https://ufl.instructure.com/courses/336010/assignments/3165524)	due by 4pm
Mon Feb 27, 2017	Linearity I (https://ufl.instructure.com/calendar?event_id=530451&include_contexts=course_336010)	12am
Wed Mar 1, 2017	Linearity II (https://ufl.instructure.com/calendar?event_id=530452&include_contexts=course_336010)	12am

Date	Details	
Mon Mar 13, 2017	RF system specs (https://ufl.instructure.com/calendar?event_id=530448&include_contexts=course_336010)	12am
Wed Mar 15, 2017	GSM specification example (https://ufl.instructure.com/calendar?event_id=530463&include_contexts=course_336010)	12am
Fri Mar 17, 2017	Transceiver architectures (https://ufl.instructure.com/calendar?event_id=530454&include_contexts=course_336010)	12am
Mon Mar 20, 2017	RXI (https://ufl.instructure.com/calendar?event_id=530456&include_contexts=course_336010)	12am
	HW #5 (https://ufl.instructure.com/courses/336010/assignments/3165525)	due by 4pm
Wed Mar 22, 2017	RXII (https://ufl.instructure.com/calendar?event_id=530457&include_contexts=course_336010)	12am
Fri Mar 24, 2017	RXIII (https://ufl.instructure.com/calendar?event_id=530458&include_contexts=course_336010)	12am
Mon Mar 27, 2017	TXI (https://ufl.instructure.com/calendar?event_id=530455&include_contexts=course_336010)	12am
Wed Mar 29, 2017	TXII (https://ufl.instructure.com/calendar?event_id=551838&include_contexts=course_336010)	12am
Fri Mar 31, 2017	ADS Q&A (https://ufl.instructure.com/calendar?event_id=545971&include_contexts=course_336010)	12am
	RFIC Packaging (https://ufl.instructure.com/calendar?event_id=530465&include_contexts=course_336010)	12am
Mon Apr 3, 2017	Guest Lecture (https://ufl.instructure.com/calendar?event_id=545970&include_contexts=course_336010)	12am
	HW #6 (https://ufl.instructure.com/courses/336010/assignments/3165526)	due by 4pm
Wed Apr 5, 2017	Exam review (https://ufl.instructure.com/calendar?event_id=530460&include_contexts=course_336010)	12am
Fri Apr 7, 2017	Exam #2 (https://ufl.instructure.com/courses/336010/assignments/3165528)	due by 4pm
Mon Apr 10, 2017	Exam recap (https://ufl.instructure.com/calendar?event_id=530461&include_contexts=course_336010)	12am
	SDR (https://ufl.instructure.com/calendar?event_id=549369&include_contexts=course_336010)	12am
Wed Apr 12, 2017	FCC Testing/Equipment (https://ufl.instructure.com/calendar?event_id=549371&include_contexts=course_336010)	12am
Mon Apr 17, 2017	Presentations (https://ufl.instructure.com/calendar?event_id=532316&include_contexts=course_336010)	12am
	Final Project (https://ufl.instructure.com/courses/336010/assignments/3165529)	due by 4pm

Date	Details	
Wed Apr 19, 2017	**Presentations (https://ufl.instructure.com/calendar?event_id=532317&include_contexts=course_336010)**	12am