EEE 5934 Radio Frequency Electronics

1. Catalog Description – (3 credits) This course will cover fundamental RF theory (such as resonant circuits, matching, noise and transmission lines), radio operation, and the design of key RF circuit blocks (such as amplifiers, mixers and oscillators).

2. Pre-requisites and Co-requisites – EEL 3396 Solid State Devices

3. Course Objectives - Learn the basics of electronic components, circuits, and systems. Design electronic circuits and systems to meet desired needs and specifications. Engage in life-long learning of electronics and related technologies

4. Contribution of course to meeting the professional component (ABET only – undergraduate courses) - 3 credits of Engineering Design

5. Relationship of course to program outcomes: Skills student will develop in this course (ABET only undergraduate courses) - EE2, a, e, k

6. Instructor - Dr. Jenshan Lin
   a. Office location: 559 NEB
   b. Telephone: 392-4929
   c. E-mail address: jenshan@ufl.edu
   d. Class Web site:
   e. Office hours:

7. Teaching Assistant - TBD
   a. Office location:
   b. Telephone:
   c. E-mail address:
   d. Office hours:

8. Meeting Times - Tues, 7th period; Thursday, 7th and 8th periods

9. Class/laboratory schedule - 3 class periods consisting of 50 minutes each

10. Meeting Location – 101 NEB

11. Material and Supply Fees - None

12. Textbooks and Software Required -
   a. Title: Microwave Transistor Amplifiers Analysis and Design
   b. Author: Guillermo Gonzalez
   c. Publication date and edition: 2nd
   d. ISBN number: 0132543354
13. Recommended Reading -
   a. Title: RF Circuit Design
   b. Author: Christopher Bowick
   c. Publication date and edition: 2nd
   d. ISBN number: 0750685182

14. Course Outline –
   - Introduction and Review
   - Resonant Circuits, Impedance Matching
   - Transmission Lines
   - Smith Charts, Impedance Matching w/ Smith Charts
   - Network Representations, 2 port, S-parameters
   - LNA; Output Matching, Input Matching, Power Gain
   - Noise Factors
   - Stability, Linearity
   - RF Systems
   - Oscillators, VCO, Phase Noise

15. Attendance and Expectations - Students are responsible to study all in class
    materials including those written on the board and presented orally, all class handouts,
    all assigned readings, all projects and homework. Absence from class can result in
    missing materials tested. All students are required to have a Gatorlink account and
    use Sakai for course handouts, grade information, course notices, etc. See Sakai
    services for help. Cell phones and other electronic devices are to be silenced. No text
    messaging during class or exams.

    Requirements for class attendance and make-up exams, assignments, and other work
    are consistent with university policies that can be found at:
    https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx

16. Grading –
    10%  - Homework (5-6 homework assignments)
    20%  - 1 design project
    50%  - Exams: 3 exams during the semester, No final exam
    20%  - In-class presentation.

17. Grading Scale. –

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Undergraduate students, in order to graduate, must have an overall GPA and an
upper-division GPA of 2.0 or better (C or better). Note: a C- average is equivalent to
a GPA of 1.67, and therefore, it does not satisfy this graduation requirement.
Graduate students, in order to graduate, must have an overall 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: https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

18. Make-Up Exam Policy - If you have a University-approved excuse and arrange for it in advance, or in case of documented emergency, a make-up exam will be allowed and arrangements can be made for making up missed work. University attendance policies can be found at: https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx

Otherwise, make-up exams will be considered only in extraordinary cases, and must be taken before the scheduled exam. The student must submit a written petition to the instructor two weeks prior to the scheduled exam and the instructor must approve the petition.

19. Honesty Policy – All students admitted to the University of Florida have signed a statement of academic honesty committing themselves to be honest in all academic work and understanding that failure to comply with this commitment will result in disciplinary action. This statement is a reminder to uphold your obligation as a UF student and to be honest in all work submitted and exams taken in this course and all others.

“…failure to comply with this commitment will result in disciplinary action compliant with the UF Student Honor Code Procedures (http://www.dso.ufl.edu/sccr/procedures/honorcode.php)

20. Accommodation for Students with Disabilities – Students Requesting classroom accommodation must first register with the Dean of Students Office. That office will provide the student with documentation that he/she must provide to the course instructor when requesting accommodation.

21. UF Counseling Services – Resources are available on-campus for students having personal problems or lacking clear career and academic goals. The resources include:
   • UF Counseling & Wellness Center, 3190 Radio Rd, 392-1575, psychological and psychiatric services.
   • Career Resource Center, Reitz Union, 392-1601, career and job search services.

22. 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.