EE 6374 Radio Frequency Circuits and Systems

1. **Catalog Description** (3 credit hours) – Requirements for RF integrated circuits. Design and implementation. Interdependence of RF circuit performance with devices, parasitics, packages, and process technology.

2. **Pre-requisites and Co-requisites** (Be specific – 5000 level courses should list topics, for example Phys 2049 or equivalent)

3. **Course Objectives**
   - 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](http://www.lin.ece.ufl.edu/?q=EEE6374)

4. **Instructor** - Dr. Jenshan Lin
   a. Office location NEB559
   b. Telephone 1-352-392-4929
   c. E-mail address jenshan@ufl.edu
   e. Office hours MWF 4th

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

6. **Meeting Times** - MWF 3rd (9:35-10:25am)

7. **Class/laboratory schedule**, 3 sessions each week. 50mins each session.

8. **Meeting Location** - NEB 201

9. **Material and Supply Fees** - N/A

10. **Textbooks and Software Required** - None. Lecture notes are developed by the instructor.

11. **Recommended Reading**
   a. Title RF MICROELECTRONICS
   b. Author BEHZAD RAZAVI
12. **Course Outline** (provide topics covered by week or by class period)
   - Regulations (week 1)
   - RF Propagation and Antenna (week 2-3)
   - Wireless Communication Standards (week 4)
   - RF System-Level Specifications (week 5-6)
   - Noise and Linearity in Receiver (week 7-8)
   - RF Transceiver Architectures (week 9-10)
   - RFIC Specifications Case Study (week 11-12)
   - Emerging Applications (week 13)
   - RFIC packaging, System Integration, and RF Testing (week 14)

13. **Attendance and Expectations** - Attendance is highly encouraged to have direct interaction but not required since the lecture videos will be posted on class website. Cellular phones, pagers, and other electronic devices that may generate ring tones or sounds must be turned off during the class. 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](https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx)

14. **Grading** – methods of evaluation (e.g., quizzes 20%, homework 15%, term paper 30%, final exam 35%)
   - Homework: 25% (about 5 or 6. Late submissions will not be graded.)
   - Exam #1: 25%
   - Exam #2: 25%
   - Final Project: 25%
   - No Final Exam

15. **Grading Scale**

    | Score Range | Grade |
    |-------------|-------|
    | 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+    |
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

16. **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.

17. **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)

18. **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.

19. **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.

20. **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.