EEE 6328  Microwave IC Design

1. Catalog Description – (3 credits) Fundamentals of microwave integrated circuit design. Use of computer software to design simple microwave circuits. Microwave circuit testing

2. Pre-requisites and Co-requisites - none

3. Course Objectives - Develop understanding of fundamentals of design and testing of RF integrated, circuits operating at microwave frequencies

4. Contribution of course to meeting the professional component (ABET only – undergraduate courses) - NA

5. Relationship of course to program outcomes: Skills student will develop in this course (ABET only undergraduate courses) - NA

6. Instructor - Dr. Qun Jane Gu
   a. Office location: 539 NEB
   b. Telephone: 392-6618
   c. E-mail address: qgu@ece.ufl.edu
   d. Class Web site:
   e. Office hours:

7. Teaching Assistant - None
   a. Office location:
   b. Telephone:
   c. E-mail address:
   d. Office hours:

8. Meeting Times - T 7th period, R 7th-8th period

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

10. Meeting Location - 239 Larsen

11. Material and Supply Fees - None

12. Textbooks and Software Required -
   a. Title - Microwave Transistor Amplifiers Analysis and Design
   b. Author - G. Gonzalez
   c. Publication date and edition - Prentice Hall, 2nd edition
   d. ISBN Number -
   e. Software - Workstations with CADENCE Design system on campus, off-campus you can use X-Windows or X-terminal on a high-speed internet link to UF Campus Computers
13. Recommended Reading - None
   a. Title:
   b. Author:
   c. Publication date and edition:
   d. ISBN number:

14. Course Outline -
   Week 1(1/9): (1~3) Introduction, Two Port Networks (Lec. 1), Transmission Lines (Lec. 2)
   Week 2(1/16) (4~5) Transmission Lines (Lec. 3-4)
   Week 3 (1/23) (6~8) Transmission Lines (Lec. 5-6), S-parameters (Lec. 7)
   Week 4 (1/30) (9~11) S-parameters (Lec. 8), Smith Chart (Lec. 10-11)
   Week 5 (2/6) (12~14) Smith Chart (Lec. 12), Impedance Matching (Lec. 13), Network Analyzer (Lec. 14)
   Week 6 (2/13) (15~17) MOS and MOS Cross-section (Lec. 15), Inductor (Lec. 16-17)
   Week 7 (2/20) (18~20) Transformer (Lec. 18-19), Resonant tank (Lec. 20)
   Week 8 (2/27) (21) Package modeling (Lec. 21), Midterm 1(2hours)
   Week 9 (3/12) (22~24) amplifier power gain (Lec. 22-23), stability (Lec. 24)
   Week 10 (3/19) (25~27) Constant-gain circles (Lec. 25-27)
   Week 11 (3/26) (28~30) Conjugate matching (Lec. 28), VSWA Circle (Lec. 29-30)
   Week 12 (4/2) (31~33) LNA overview (Lec. 31-33)
   Week 13 (4/9) (34~36) Input matching (Lec. 34), Output matching (Lec. 35-36)
   Week 14 (4/16) (37) noise figure circles (Lec. 37), Midterm 1 (2hours)
   Week 15 (4/23) (38) Substrate effects and Other RF blocks (Lec. 38)

15. Attendance and Expectations - All students are required to have a Gator link account and use Sakai for course handouts, grade information, course notices, etc. see Sakai services for help. 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 on exams. 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 –
   Homework - 10%
   Project - 20%
   Exams - 70%

17. Grading Scale – tentative grading is below

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“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

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.