

COURSE: EEL 6936 001, 141, 521, 797, 798, 799, RF & Microwave Circuits II
 TERM: Spring Term, 2003
 MEETS: Lecture: Monday & Wednesday 2:00-3:15, ENB-113
 TEXTS: *Microwave Transistor Amplifiers*, Gonzalez, Second Edition
Microelectronic Circuits, Sedra & Smith, Fourth Edition
 WEB PAGE: <http://my.usf.edu>
 INSTRUCTOR: H. C. Gordon, Jr.; Phone 813-974-3611 (Office at USF), 941-922-9334 (Home in Sarasota), E-Mail: gordon@eng.usf.edu
 OFFICE HOUR: ENB-377; Monday, Wednesday 12:00-1:00; Tuesday, Thursday 12:30-1:30; Other By Appointment.
 OBJECTIVE: Provide an introduction to the properties of active RF and microwave circuits.
 ATTENDANCE: Students are expected to attend lectures. Examinations must be taken as scheduled. Requests for makeup examinations will be considered on individual merit.
 GRADING: Three exams are scheduled (100 points each), CAD exercises (75 points), comprehensive design project (75 points).
 Final grade is based on 450 points: A = 394; B = 38; C = 281.
 RELIGIOUS EVENTS: "Students who anticipate the necessity of being absent from class due to the observation of a major religious observance must provide notice of the date(s) to the instructor, in writing, by the second class meeting. See <http://acad.usf.edu/religious.html>."
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Date	Day	Lect	Lecture Topics	Chapter	Pages	Problems
1/6	M	0	Introduction & Preliminaries			None
1/8	W	1	Review Of Impedance Smith Chart; Examples 2.2.1 thru 2.2.7; Normalized Impedance And Admittance Smith Chart; Examples 2.3.1, 2.3.2, 2.3.3	G 2	92-112	2.1all; 2.5; 2.8; 2.9all
1/13	M	2	Lumped Element Matching Networks; Examples 2.4.1 thru 2.4.4	G 2	112-124	2.10; 2.12; 2.14
1/15	W	3	Three-Element Lumped Matching Networks; Examples 2.4.5 thru 2.4.8	G 2	125-141	2.13; 2.15all
1/20	M		NO CLASS — Martin Luther King Day Holiday			
1/22	W	4	Distributed Element Matching Networks; Examples 2.5.2 thru 2.5.6; CAD #1	G 2	152-175	2.19all; 2.21all; 2.24all; 2.32all
1/27	M	5	Power Gain Expressions; VSWR Calculations; Examples 2.8.1, 2.8.2; Example 3.2.1; Stability Circles, Part 1	G 2	185-192	2.35all; 2.36all 3.3all; 3.4
				G 2	194-198	
				G 3 G AA, AB	212-220 449-461	
1/29	W	6	Stability Circles, Part 2; Examples 3.3.1, 3.3.2; Unilateral Constant Gain Circles; Examples 3.4.1, 3.4.2	G 3	220-239	3.5all; 3.7all; 3.8; 3.16all
				G AC	462-463	
2/3	M	7	Bilateral Conjugate Match; Example 3.6.1; Operating Power Gain Circles	G 3	240-253	3.21; 3.24all
				G AE, AF, AG	466-473	

Date	Day	Lect	Lecture Topics	Chapter	Pages	Problems
2/5	W	8	Examples 3.7.1; 3.7.2, 3.7.3; Available Power Gain Circles; CAD #2	G 3	253-260	3.25all; 3.26; 3.27all
2/10	M	9	Constant VSWR Circles; Examples 3.8.1, 3.8.2	G 3 G AI, AJ	260-273 476-479	3.32all; 3.33all
2/12	W	10	BJT DC Characteristics Revisited FET DC Characteristics Revisited	S&S 4 S&S 5	222-282 353-402, 447-458	None
2/12	W		EXAM #1 Open Book, Notes, Take-Home Distributed	Lectures 1 thru 8		
2/17	M	11	DC Bias Networks; Examples 3.9.1, 3.9.2	G 3	273-283	3.36all; 3.37all
2/19	W	12	Thermal Noise, Amplifier Noise Figure, Noise Figure Circles; Example 4.2.1; CAD #3	G 4 G AK, AL	294-302 480-492	4.1all; 4.4all; 4.6
2/24	M	13	Examples 4.3.1, 4.3.2, 4.3.3, 4.3.4, 4.3.5, 4.3.6	G 4	302-322	4.8; 4.12; 4.13
2/24	M		EXAM #1 Open Book, Notes, Take-Home Due	Lectures 1 thru 8		
2/26	W	14	Broadbanding; Example 4.4.1 (p. 324); Balanced Amplifiers; Example 4.4.1 (p. 331)	G 4	323-333	4.15; 4.16all
3/3	M	15	BJT, FET AC Characteristics Revisited	S&S 7	602-635	None
3/5	W	16	Miller's Theorem; Gain-Bandwidth Product; CAD #4 Feedback Amplifiers; Examples 4.4.2, 4.4.3	Lecture Notes G 4	333-344	None 4.19
3/10	M		NO CLASS — Spring Semester Break			
3/12	W		NO CLASS — Spring Semester Break			
3/17	M		NO CLASS — Prof. Gordon Unavailable			
3/19	W		Catch Up With Schedule			
3/21	F		WITHDRAWAL DEADLINE			
3/24	M		NO CLASS — Prof. Gordon Unavailable			
3/26	W	17	Gain-Bandwidth Matching Restrictions; Example 4.4.4; Amplifier Tuning; CAD #5	G 4	344-348	4.21a, b
3/31	M	18	Bandwidth Analysis; Example 4.6.1	G 2 G 4 G 4	125-137 348-352 352-356	4.24all; 4.25 4.27; 4.28
			Large-Signal Amplifiers: 1-dB Compression, Reflection Coefficients			

Date	Day	Lect	Lecture Topics	Chapter	Pages	Problems
4/2	W	19	Bias Considerations: Class A, Class B, Class C; Intermodulation Distortion; Third-Order Intercept; Example 4.7.1	G 4	356-364	4.26
4/6	S	EXAM #2	Open Book, Notes; 12:00 - 6:00, ENB-116	Lectures 9 thru 16		
4/7	M	NO CLASS — Day After Exam #2				
4/9	W	20	Power Combiners; Examples 4.7.2 thru 4.7.5; Two-Stage Amplifiers	G 4	364-374	4.29, 4.30
4/14	M	21	One-Port Negative Resistance Oscillators; Examples 5.2.1, 5.2.2	G 5	384-397	5.2; 5.3
4/16	W	22	Two-Port Negative Resistance Oscillators; Examples 5.3.1, 5.3.2	G 5	397-404	5.5; 5.7
4/21	M	23	Large-Signal Oscillator Design; Example 5.4.1	G 5	404-411	5.8
4/23	W	24	Feedback Network Oscillators; DR & YIG Oscillators; Varactor-Tuned Oscillators	G5	411-427	5.11; 5.14
4/27	S	EXAM #3	Open Book, Notes; 12:00 - 6:00, ENB-116	Lectures 17 thru 24		