Course Syllabus	**EECS 3420 - Electronics II**
Credits & Contact Hours	3 credits & three 50-minute classroom contact per week
Instructor's Name	Dr. Roger King
Textbook	R. Jaeger and T. Blalock, "Microelectronic Circuit Design," McGraw-Hill, 2008, 3rd edition. Recommended supplement: J. Tront, "PSpice for Basic Microelectronics," McGraw-Hill, 2008.
Course Information	Analog transistor, diode and integrated circuit analysis and design. Incremental analysis techniques, frequency response and feedback techniques. Prerequisite: EECS 3210 and EECS 3400 Required course for EE.
Specific Goals-Student Learning Objectives (SLOs)	The student will be able to 1. Produce useful incremental models for MOSFET's and BJT's at midband and high frequency. 2. Describe the properties of four basic analog amplifier topologies (CE, CB, CC, and differential pair). 3. Produce useful incremental models for broadband analog amplifiers in their midband, low-frequency, and high-frequency regions. 4. Calculate amplifier transfer functions, and input and output resistances. 5. Calculate, interpret and communicate the low- and high-frequency response behaviors of broadband amplifiers using Bode plots and suitable approximations. 6. Characterize the effects of midband negative feedback on broadband amplifiers at the system (block diagram) level. 7. Identify and model the midband effects, including impedance modification, of series-series, shunt-shunt, shunt-series, and series-shunt negative feedback on broadband amplifiers. 8. Succinctly state the basic concepts of the course using one or two sentences per concept.
Topics	1. Amplifier concepts/frequency response/dB notation. 2. Incremental modeling for BJT/MOSFETs 3. One-stage amplifiers/resistance calculations. 4. Differential pair/common-mode, differential-mode 5. Frequency response in amplifiers, lf, hf equivalents. 6. Concept of negative feedback 7. Application of negative feedback to amplifiers. 8. Tests and review.