Introduction to Circuits and Systems (EECT 5321)

Continuation of EEMF 5320. Topics include analog circuits, digital circuits, digital systems and communication systems. May not be used to fulfill 33 semester credit hours in MSEE degree requirements. (3-0) R

Analog Integrated Circuit Analysis and Design (EECT 5340)

Application of MOSFET and BJT large-signal and small-signal models to analyze and design amplifiers, analysis and design of current mirrors and differential amplifiers, analysis of frequency response of amplifiers, and feedback theories. Prerequisite: EE 3311 or equivalent. (3-0) Y

VLSI Design (EECT 6325 (CE 6325))

Introduction to MOS transistors. Analysis of the CMOS inverter. Combinational and sequential design techniques in VLSI; issues in static, transmission gate and dynamic logic design. Design and layout of complex gates, latches and flip-flops, arithmetic circuits, memory structures. Low power digital design. The method of logical effort. CMOS technology. Use of CAD tools to design, layout, check, extract and simulate a small project. Prerequisites: EE 3301 and EE 3320 or equivalent. (3-0) S

Analog Integrated Circuit Design (EECT 6326)

Further treatment on the use of MOSFET and BJT large signal and small signal models to analyze and design analog integrated circuits. Topics include advanced current mirrors, references, frequency response of single-stage and differential amplifiers, stability and compensation of amplifiers, design of two-stage amplifiers, common mode feedback, and introduction of noise analysis. Use of CAD tools to simulate and design analog integrated circuits. Prerequisite: EE 4340. (3-0) S

Power Management Circuits (EECT 6378)

This course introduces different circuits related to power management systems. Topics include analysis and design of voltage references, magnetics, and different dc-dc converters including: switched-mode power converters, linear regulators and switched-capacitor charge pumps. Use of CAD tools to design and simulate power management circuits. Prerequisite: EECT 6326 or equivalent. (3-0) Y

Data Converters (EECT 6379)

Data converter circuits in modern mixed-signal VLSI systems. Topics include sampling, switched-capacitor amplifiers and integrators, sample-and-hold circuits, voltage comparators, Nyquist-rate and oversampling converters.
Prerequisites: EECT 6325 and EECT 6326. (3-0) T
EECT 7V88 Special Topics in Circuits and Systems (1-6 semester credit hours) May be repeated for credit as topics vary (9 semester credit hours maximum). ([1-6]-0) R