Department of Electrical and Computer Engineering
The Johns Hopkins University

520.137 Introduction to Electrical and Computer Engineering

Fall 2012

Dates	Tentative Course Syllabus
Sep. 5 – 7	Introduction. Motivation. Historical Backgrounds. Overview. Signals and Systems. Modeling. Analog and Digital Representations.
Sep. 10 – 14	Labor Day. Circuits. Currents. Voltages. Power. Energy. Resistors and Resistance. Current and Voltage Law.
Sep. 17 – 21	Circuit Modeling: Norton and Thevenin Equivalent Circuits. Capacitors and Capacitance. Inductors and Inductance. Lab 1.
Sep. 24 – 28	Simple RC Circuits. Analog Filters. Microphones and Loudspeakers. Lab 2. Exam I Review.
Oct. 1 – 5	Binary Number System. AND OR NAND NOR Gates. Exam I. Lab 3.
Oct. 8 – 12	Combinational Logic Circuits. Adders and Multipliers. Sequential Logic Circuits.
Oct. 16 – 19	Class on Tuesday! Set-Reset and Toggle Flip-Flops. Counters. RAM. Finite-State Machines. Lab 4.
Oct. 22 – 26	Sampling. Nyquist Sampling Rate. Aliasing Error. Quantization. A/D and D/A Conversion.
Oct. 29 – Nov. 2	Information Theory. Coding. Decoding. Compression. Shannon-Fano Code. Huffman Code. MP3. Lab 5.
Nov. 5 – 9	Exam II Review. Exam II. Signal Processing. Filtering. Image Processing.
Nov. 12 – 16	Error Detection and Correction. Bar Codes. USPS Code. UPC. Lab 6.
Nov. 19 – 23	Communications. Modulation. Thanksgiving.
Nov. 26	Wireless Communications and Cell Phones. Packet-switched Networks. Internet.
Dec. 3 – 7	Final Design Project.
Dec. 20	Final Exam 2-5PM Shaffer 101.