Department of Electrical and Computer Engineering
The Johns Hopkins University

520.137 Introduction to Electrical and Computer Engineering

Fall 2016

Dates	**Tentative Course Syllabus**
Sep. 2 – Sep. 9	Introduction. Motivation. Historical Backgrounds. Overview. Labor Day. Signals and Systems. Modeling. Analog and Digital Representations.
Sep. 12 – 16	Circuits. Currents. Voltages. Power. Energy. Resistors and Resistance. Current and Voltage Law. Lab 1.
Sep. 19 – 23	Circuit Modeling: Norton and Thevenin Equivalent Circuits. Capacitors and Capacitance. Inductors and Inductance.
Sep. 26 – 30	Simple RC Circuits. Analog Filters. Microphones and Loudspeakers. Lab 2. Exam I Review.
Oct. 3 – Oct. 7	Lab3. Exam I. Transistors. Binary Number System. AND OR NAND NOR Gates.
Oct. 10 – 14	Combinational Logic Circuits. Adders and Multipliers. Sequential Logic Circuits.
Oct. 17 – 21	Class on Thurs! Set-Reset and Toggle Flip-Flops. Counters. RAM. Finite-State Machines. Lab 4.
Oct. 24 – 28	Sampling. Nyquist Sampling Rate. Aliasing Error. Quantization. A/D and D/A Conversion.
Oct. 31 – Nov. 4	Lab 5. Exam II Review. Exam II.
Nov. 7 – 11	Signal Processing. Filtering. Image Processing. Information Theory. Coding. Decoding. Compression.
Nov. 14 – 18	Shannon-Fano Code. Huffman Code. Error Detection and Correction.
Nov. 21 – 25	Thanksgiving Vacation.
Nov. 28 – Dec. 2	Bar Codes. USPS Code. UPC. Lab 6. Wireless Communications and Cell Phones. Internet. Google PageRank.
Dec. 5 – 9	Final Design Project.
Dec. 21	Final Exam 9AM–12PM Shaffer 101.