Department of Electrical and Computer Engineering
The Johns Hopkins University

520.137 Introduction to Electrical and Computer Engineering

Fall 2017

Dates	**Tentative Course Syllabus**
Aug. 31 – Sep. 9	Introduction. Motivation. Historical Backgrounds. Overview. Labor Day. Signals and Systems. Modeling. Analog and Digital Representations.
Sep. 11 – 15	Circuits. Currents. Voltages. Power. Energy. Resistors and Resistance. Current and Voltage Law. Lab 1.
Sep. 18 – 22	Circuit Modeling: Norton and Thevenin Equivalent Circuits. Capacitors and Capacitance. Inductors and Inductance.
Sep. 25 – 29	Simple RC Circuits. Analog Filters. Microphones and Loudspeakers. Lab 2. Exam I Review.
Oct. 2 – Oct. 6	Lab3. Exam I. Transistors. Binary Number System. AND OR NAND NOR Gates.
Oct. 9 – 13	Combinational Logic Circuits. Adders and Multipliers. Sequential Logic Circuits.
Oct. 16 – 20	Class on Thurs! Set-Reset and Toggle Flip-Flops. Counters. RAM. Finite-State Machines. Lab 4.
Oct. 23 – 27	Sampling. Nyquist Sampling Rate. Aliasing Error. Quantization. A/D and D/A Conversion.
Oct. 30 – Nov. 3	Lab 5. Exam II Review. Exam II.
Nov. 6 – 10	Signal Processing. Filtering. Image Processing. Information Theory. Coding. Decoding. Compression.
Nov. 13 – 17	Shannon-Fano Code. Huffman Code. Error Detection and Correction.
Nov. 20 – 24	Thanksgiving Vacation.
Nov. 27 – Dec. 1	Bar Codes. USPS Code. UPC. Lab 6. Wireless Communications and Cell Phones. Internet. Google PageRank.
Dec. 4 – 8	Final Design Project.
Dec. 22	Final Exam 9AM–12PM Shaffer 100.