520-142 Digital Systems Fundamentals Spring 2014

Topics (last updated 04/22/2014)

Introduction (01/27/14)
Binary Systems, Number Base Conversion (02/03/14)
Complement Number Systems (02/05/14)
Boolean Algebra and Logic Gates (02/12/14)
Analysis of Switching Networks, Canonical Forms (02/19/14)
Simplification of Boolean Functions: The Karnaugh Map Method (03/03/1r43)
Prime Implicants and the Quine-McCluskey Method (03/07/14)

Combinational Logic vs Sequential Logic (03/26/14)
Finite State Machines, State Tables, State Diagrams (03/28/14)
Types of Synchronous Circuits: Pulse Inputs and Level Inputs (03/31/14)
T Flip-Flops and Analysis of Synchronous Sequential Devices with T Flip-Flops (03/31/14)
D-Flip-Flops and Analysis of Synchronous Sequential Devices with D Flip-Flops (04/09/14)
JK Flip-Flops and Analysis of Synchronous Sequential Devices with JK Flip-Flops (04/11/14)
Analysis of Synchronous Sequential Devices with Mixes of Flip-Flops (04/16/14)
Sequential Logic Design Procedure: Excitation Tables for T, D and JK Flip-Flops (04/16/14)

SR Flip-Flops and Design Procedure with SR Flip-Flops (04/18/14)
State Reduction: Partitioning Method (04/21/14)
Sequential Logic: Design of Sequence Recognizers (04/30/12)
Basic Flip-Flops Circuits (05/04/12)