

Ch 1 - Elements

- AND
- OR
- NOT
- D flip-flop
- JK flip-flop

Ch 2 - Components

- Decoder: n to 2^n
- Encode: 2^n to n
- Mux: n selects 2^n to 1
- Registers:
 - parallel load
 - shift
 - count + load
- Memory: RAM, ROM

Ch 3 - Data

- Number bases: 2, 8, 10 16
- 2's complement
- ASCII, etc.
- Fixed and float
- Arithmetic

Ch 4 - RTL

- Bus
- Registers
- Memory
- ALU

Ch 5 - Basic Computer

- Data Paths - pg 130
- Instructions - pg 133
 - Formats - pg 132
 - Memory reference
 - Register reference
 - Input/Output
- Control
 - Timing - pg 138
 - Instruction cycle
 - Figs pp: 158,144,150,152
 - Table pg 159

Ch 6 - Programming

- Machine Language
- Assembly Language
 - Loops
 - Operations
 - Subroutines
 - Input/Output
- Assembler

Ch 7 - MicroProgram Control

- Control Memory
- Operations
- Sequencing
- Programming
 - code
 - binary
- Hardware

Ch 8 - CPU bigger

- More registers
- Stacks
 - RPN
- Instruction formats
 - 0, 1, 2, 3 addresses
- Addressing Modes
- Interrupts
- CISC vs RISC

Ch 8 - CPU bigger

- More registers
- Stacks
 - RPN
- Instruction formats
 - 0, 1, 2, 3 addresses
- Addressing Modes
- Interrupts
- CISC vs RISC

Ch 9 - Pipelining

- Pipelines
 - Arithmetic
 - Instruction
- Vector processing
- Array processing

Chapters 5 and 6

Ch 10 - Arithmetic

- Addition, Subtraction
- Multiplication
- Division
- Floating Point
- Decimal

Ch 11 - Input/Output

- Devices, Interfaces
- Asynchronous
- Modes, Interrupts
- DMA
- Serial

Ch 12 - Memory

- Hierarchy
- Main
- Cache
- Virtual

Chapter 7

