Unit-1

von neumann machine: chapter 2 page 18-25 William Stallings e-book
instruction formats: chapter 10 pages 353-356 W.Stallings
fetch/execute cycle: chapter 3 page69-73 W.Stallings
instruction decoding and execution: chapter 3 page 69-73 W.Stallings
registers, register files: pages 487-491 W.Stallings
instruction types:pages 353-356 W.Stallings
addressing modes: chapter 11 pages: 401-408
subroutine call and return mechanism: ppt, page 568 W.Stallings
programming in ASM: notes on intranet
i/o techniques : pages 224-232 W.Stallings (only main points -details in unit 4)
interrupts: extension of subroutine
other design issues: chapter 21 pages:8-10 Hennessy and Patterson

Unit-2

Data Representation:world wide web for integers, real numbers, characters
H/W and S/W implementation of

a. integer adder/subtractor: morris mano chapter 10-2
b. integer multiplication :morris mano chapter 10-3
c. integer division: morris mano chapter 10-4

H/W and S/W implementation of

a. floating point addition/subtraction morris mano chapter 10-5
b. floating point multiplication/division morris mano chapter 10-5

Conversion between integer and real numbers: numerical methods text book

Unit-3

Memory system hierarchy: W.Stallings pages 114-117
Coding: parity(odd, even), Hamming code
Compression: internet
Data integrity: to be done
Electronic, magnetic, optical technologies: W.stallings pages 165-194, 203-212
Main memory organization, types of main memories, and its characterstics and performance: W.stallings pages 159-166
Latency, cycle time, bandwidth, interleaving: W.Stallings pages 168, 113-114
Cache memories: W.Stallings chapter 4
Virtual memory systems: W.Stallings pages 277-287
Reliability of memory systems: to be done
Error detecting and error correcting systems: w.Stallings pages 169-173

Unit-4

I/O fundamentals, handshaking, buffering: w.stallings pages 223-224,
I/O techniques: programmed i/o: w.stallings pages 224-228
Interrupt i/o: w. stallings pages 228-232
DMA: w.stallings pages 236-239
Interrupt structures : vectored : from internet
Prioritized: from slides
Interrupt overhead: w.stallings various places in chapter 7
Interrupts and reentrant code: w.stallings pages 373-373

Unit-5

External Storage Systems: W.Stallings pages 185-188, 210-212
Organization of disk drives: W.Stallings pages 188-194
Organization of optical memories: W.stallings pages 203-210 (pages 206-210 to be completed)
Basic i/o controllers like mouse, keyboard: internet
RAID architectures: W.Stallings pages 194-203
Video control: video formats from internet, slides url: http://en.wikipedia.org/wiki/Video_file_format
i/o performance: w.Stallings pages 188-194,
S.M.A.R.T : internet url: http://en.wikipedia.org/wiki/S.M.A.R.T.
Fault detection: John P Hayes
Processor to Network interface: slides