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| Discipline : Computer Engineering semester :5th  subject : COA lesson plan duration : 15 weeks (From August 2022 to December 2022) | | |
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| Week | lectures | Topic |
| 1 | 1st | Unit-1 :Introduction to Computer Systems, Organization and Architecture,Von Neumann Architecture |
| 2nd | Evolution and computer generations, Fixed point representation of numbers |
| 2 | 3rd | Digital arithmetic algorithms for Addition and Subtraction |
| 4th | Multiplication using Booth’s algorithm |
| 3 | 5th | Division using restoring algorithm Division using Non restoring algorithm |
| 6th | Floating point representation with IEEE standards and its arithmetic operations |
| 4 | 7th | Memory organization: Memory Hierarchy, Main Memory , Auxiliary Memory, Associative Memory |
| 8th | Cache Memory, Virtual Memory |
| 5 | 9th | Unit-2 :Instruction codes, stored program organization |
| 10th | Computer registers and common bus system, computer instructions |
| 6 | 11th | Timing and control, instruction cycle: Fetch and Decode |
| 12th | Register reference instructions; memory reference instructions, Input, output |
| 7 |  | minor test 1 |
| 8 | 13th | Interrupt:configuration,instuctions,program interrupt,interupt cycle |
| 14th | Micro programmed Control, organization, control memory, address sequencing, micro program  Example, Microprogram Sequencer, |
| 9 | 15th | Horizontal vs vertical micro- programming, design of control unit, microprogram sequencer, hardwired  v/s micro- programmed control unit |
| 16th | Unit-III: General register organization, stack organization ,instruction format |
| 10 | 17th | Addressing modes, Data transfer and manipulation |
| 18th | Program control, CISC and RISC |
| 11 | 19th | pipeline and vector Processing, parallel processing, |
| 20th | Flynn’s taxonomy, Pipelining |
| 12 | 21th | Instruction pipeline, Basics of vector Processing and Array processors. |
| 22th | Unit- iv: I/O interface, I/O bus, and interface modules, I/O versus memory bus. |
| 13 | 23th | Asynchronous data transfer: strobe control, Handshaking, Asynchronous serial transfer |
| 24th | modes of transfer: programmed I/O, interrupt driven I/O,Priority interrupt |
| 14 |  | minor test 2 |
| 15 | 25th | Daisy chaining ,parallel priority interrupt, direct memory access,DMA controller and transfer |
| 26th | input output processor ,CPU-IOP communcation,serial communication |