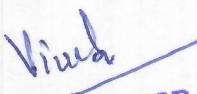


<b>MCA- C103 Computer System Architecture</b>				
	L	T	P	C
	3	1	0	4
<b>Course objective:</b>				
<ol style="list-style-type: none"> <li>1. To understand the basic hardware and software issues of computer organization.</li> <li>2. To provide an overview on the design principles of digital computing systems.</li> <li>3. To understand the representation of data at machine level.</li> </ol>				
<b>Course outcomes:</b>				
<ol style="list-style-type: none"> <li>1. Ability to analyze the abstraction of various components of a computer.</li> <li>2. Ability to apply performance metrics to find the performance of systems.</li> </ol>				
<b>Digital Electronics:</b> Boolean algebra and logic Gates, Simplification of Boolean Functions, Adders, subtractors, Binary parallel adder, Decimal adder, Magnitude comparator, Decoders, Multiplexers. Flip- flops (RS, D, JK, Master- slave & T flip-flops), Flip- flop Excitation table, analysis, Design of counters, Design with state equations, Registers, Shift register, Ripple Counter, Synchronous Counters, Timing sequences.				
<b>Central Processing Unit:</b> Computer registers, bus system, instruction set, timing and control, instruction cycle, memory reference, input-output and interrupt, Bus Interconnection design of basic computer, register organization; Stack organization; Instruction Format and Addressing Modes.				
<b>Control Unit:</b> Control memory, Address Sequencing, Micro program, Design of Control Unit.				
<b>Arithmetic Algorithms:</b> Integer multiplication; Integer division, Floating point representations and Arithmetic algorithms.				
<b>I/O Organization:</b> Peripheral Devices, Input-Output Interface, Asynchronous Data Transfer, Modes of Data Transfer, Priority Interrupt, Direct Memory Access, Input Output Processor.				
<b>Memory Organization:</b> Memory Hierarchy, RAM, ROM, Associative Memory, Cache Memory Organization and Virtual Memory Organization.				
<b>Recommended Books:</b>				
<ol style="list-style-type: none"> <li>1. Hayes J.P, <i>Computer Architecture and Organization</i>, McGraw Hill</li> <li>2. Hamacher Cart, Vranesic Zvonko, Zaky Safwat, <i>Computer Organization</i>, McGraw Hill</li> <li>3. Mano M. Morris, <i>Computer System Architecture</i>, Third Edition, PHI</li> </ol>				

  
**HEAD**  
 Department of Computer Science  
 Gurukul Kangri Vishwavidyalaya  
 Haridwar (UK) - 249404