

MANGALORE UNIVERSITY



DEPARTMENT OF M.Sc. COMPUTER SCIENCE

MASTER OF COMPUTER APPLICATIONS (MCA) PROGRAMME

MCAH103 :MICROPROCESSORS AND PERIPHERALS		
Hours/Week: 4 Credits : 4		I.A. Marks: 30 Exam. Marks: 70
<u>Course Outcomes:</u> CO1: The student will be able to analyze, specify, design, write and test assembly language programs of moderate complexity. CO2: The student will be able to select an appropriate ‘architecture’ or program design to apply to a particular situation; e.g. an interrupt-driven I/O handler for a responsive real-time machine. Following on from this, the student will be able to design and build the necessary programs. CO3: The student will be able to calculate the worst-case execution time of programs or parts of programs, and to design and build, or to modify, software to maximize its run time memory or execution-time behavior. CO4: The student will be able to characterize and predict the effects of the properties of the bus on the overall performance of a system. CO5: The student will be able to describe some of the characteristics of RISC and CISC architectures.		
	UNIT-I	12 Hours
Microcomputer Structure Overview of microcomputer structure and operation, microprocessor evolution and types. Microprocessor and 8086 Architecture: 8086 internal architecture, introduction to 8086 programming, 8086 Instruction Set: 8086 instruction description and assembler directives		
	UNIT-II	12 Hours
Programming the Microprocessor 8086 family assembly language programming – instruction templates, MOV instruction coding format and examples, writing programs for use with an assembler, assembly language program development tools. Implementing Standard Program Structures in 8086 Assembly Language – simple sequence programs, jumps, flags, and conditional jumps, if-then, if-then-else, and multiple if-then-else programs, while-do programs, repeat-until programs, instruction timing and delay loops		
	UNIT-III	12 Hours
Strings, Procedures and Macros: String instructions in 8086, writing and using procedures, writing and using assembler macros. Arithmetic Co-processor: Data formats for arithmetic co-processor, 80x87 architecture and instruction set.		

	UNIT-IV	12 Hours
Interrupt Service Routine 8086 interrupts and interrupt responses, hardware interrupt applications, 8259A priority interrupt controller, software interrupt applications Introduction To Advanced Microprocessors Salient features of 80186, 80286, 80386, 80486 and Pentium family processors. Digital Interfacing Programmable Parallel Ports and handshake I/O, methods of data transfer, implementing handshake data transfer.		
REFERENCE BOOKS 1. Douglas V. Hall, Microprocessors and Interfacing, Revised 2nd Edition 2. Barry B. Brey, Advanced Microprocessors, 4th Edition 3. Liu and Gibson, Microprocessors, 2nd Edition 4. Barry B. Brey, The Intel Microprocessors, Prentice Hall, 2008, 8th Edition		

