



# MANGALORE UNIVERSITY

## DEPARTMENT OF M.Sc. COMPUTER SCIENCE

### MASTER OF COMPUTER APPLICATIONS (MCA) PROGRAMME

<b>MCAH103 :MICROPROCESSORS AND PERIPHERALS</b>		
<b>Hours/Week: 4</b>		<b>I.A. Marks: 30</b>
<b>Credits : 4</b>		<b>Exam. Marks: 70</b>
<b><u>Course Outcomes:</u></b>		
<p>CO1: The student will be able to analyze, specify, design, write and test assembly language programs of moderate complexity.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>CO5: The student will be able to describe some of the characteristics of RISC and CISC architectures.</p>		
<b>UNIT-I</b>		<b>12 Hours</b>
<b>Microcomputer Structure</b>		
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		
<b>UNIT-II</b>		<b>12 Hours</b>
<b>Programming the Microprocessor</b>		
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		
<b>UNIT-III</b>		<b>12 Hours</b>
<b>Strings, Procedures and Macros: String</b> instructions in 8086, writing and using procedures, writing and using assembler macros.		
<b>Arithmetic Co-processor: Data</b> formats for arithmetic co-processor, 80x87 architecture and instruction set.		

	<b>UNIT-IV</b>	<b>12 Hours</b>
<p><b>Interrupt Service Routine</b>  8086 interrupts and interrupt responses, hardware interrupt applications, 8259A priority interrupt controller, software interrupt applications</p> <p><b>Introduction To Advanced Microprocessors</b>  Salient features of 80186,80286,80386,80486 and Pentium family processors.</p> <p><b>Digital Interfacing</b>  Programmable Parallel Ports and handshake I/O, methods of data transfer, implementing handshake data transfer.</p>		
<p><b>REFERENCE BOOKS</b></p> <ol style="list-style-type: none"> <li>1. Douglas V. Hall, <b>Microprocessors and Interfacing</b>, Revised 2<sup>nd</sup> Edition</li> <li>2. Barry B. Brey, <b>Advanced Microprocessors</b>, 4<sup>th</sup> Edition</li> <li>3. Liu and Gibson, <b>Microprocessors</b>, 2<sup>nd</sup> Edition</li> <li>4. Barry B. Brey, <b>The Intel Microprocessors</b>, Prentice Hall, 2008, 8<sup>th</sup> Edition</li> </ol>		

