



**Syllabus for 4-Years UG Honours in B.Sc (Electronics) as Major in
consonance**

with curriculum frame work (W.E.F. AY-2026-27)

COURSE STRUCTURE (for Semester III)

II	III	5	Analog Circuits and Communication	3	3
			Analog Circuits and Communication Practical Course	2	1
		6	Microprocessor System	3	3
			Microprocessor System Practical Course	2	1
		7	Electrical and Electronics Instrumentation	3	3
			Electrical and Electronics Instrumentation Practical Course	2	1

SEMESTER-III
COURSE-6: MICROPROCESSER SYSTEMS

Theory

Credits:3

3 hrs/week

Course Objectives:

1. To understand basic architecture of 16 bit and 32 bit microprocessors.
2. To understand interfacing of 16 bit microprocessor with memory and peripheral chips involving system design.
3. To understand techniques for faster execution of instructions and improve speed of operation and performance of microprocessors
4. To understand RISC based microprocessors.
5. To understand concept of multi core processors.

UNIT -I: CPU ARCHITECTURE (9 hrs)

Introduction to Microprocessor, INTEL - 8085(P) Architecture, CPU, ALU unit, Register organization, Address, data and control Buses. Pin configuration of 8085. Addressing modes
8086 Microprocessor: Architecture, Pin description. Instruction format, Instruction Execution timing, Addressing modes

UNIT -II: 8085 Microprocessor (9 hrs)

8085 Instruction Set: Data transfer Instruction, Logical Instructions, Arithmetic Instructions, Branch Instructions, Machine Control instructions.

UNIT -III: 8085 Microprocessor Programming (9 hrs)

Assembly Language Programming using 8085, Programmes for Addition, Subtraction, Multiplication, Division, largest and smallest number in an array. BCD to ASCII and ASCII to BCD.

UNIT -IV: 8086 Microprocessor (9 hrs)

Basic 8086 Configurations – Minimum mode and Maximum Mode, Interrupt Priority Management I/O Interfaces: Serial Communication interfaces, Parallel Communication, Programmable Timers, Keyboard and display, DMA controller.

UNIT -V: ARM PROCESSOR (9 hrs)

Introduction to 16/32 bit processors, Arm architecture & organization, Arm based MCUs, Programming model, Instruction set.

TEXTBOOKS:

1. Microprocessor Architecture, Programming and Applications with the 8085 – Penram International
2. Publishing, Mumbai.- Ramesh S. Gaonakar

3. Microcomputer Systems the 8086/8088 family – YU-Cheng Liu and Glenn SA Gibson
4. Microcontrollers Architecture Programming, Interfacing and System Design
– Raj Kamal
5. 8086 and 8088 Microprocessor by Tribel and avatar singh

REFERENCES:

1. Microprocessors and Interfacing – Douglas V.Hall
2. Microprocessor and Digital Systems – Douglas V. Hall
3. Advanced Microprocessors & Microcontrollers - B.P.Singh & Renu Singh – New Age
4. The Intel Microprocessors – Architecture, Programming and
Interfacing – Bary B.Brey.
5. Arm Architecture reference manual –Arm ltd.

SEMESTER-III

COURSE-6: MICROPROCESSOR SYSTEMS

Theory

Credits:3

3 hrs/week

1. The student can gain good knowledge on microprocessor and implement in practical applications
2. Design system using memory chips and peripheral chips for 16 bit 8086 microprocessor.
3. Understand and devise techniques for faster execution of instructions, improve speed of operations and enhance performance of microprocessors.
4. Understand multi core processor and its advantages

List of Experiment

Programs using Intel 8085 /8086

1. Addition and Subtraction (8 bit and 16-bit)
2. Multiplication and Division (8-bit)
3. Largest number in an array.
4. Smallest number in an array.
5. BCD to ASCII and ASCII to BCD .
6. Program To Convert Two Bcd Numbers In To Hex
7. Program To Convert Hex Number In To Bcd Number.
8. Program To Find The Square Root Of A Given Number.
9. Interfacing Experiments Using 8086 Microprocessor (Demo):
10. Traffic Light Controller, Elevator, 7-Segment Display

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4- Year UG Honours, Major
Syllabus
(2026-27)
Semester-III

Model Question Paper

Time : 3hrs

Marks:75

Part-A

Answer any Five Questions. Each Question carries 3 Marks.

5x3=15

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

Answer the following questions. Each question carries 12 Marks

5x12=60

11. a) Unit-I
(Or)
b) Unit-I

12. a) Unit-II
(Or)
b) Unit-II

13. a) Unit-III
(Or)
b) Unit-III

14. a) Unit-IV
(Or)
b) Unit-IV

15. a) Unit-V
(Or)
b) Unit-V