

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI

COURSE PLAN (June - November 2026)

Department : PHYSICS
Name/s of the Faculty : DR. BELINA XAVIER
Course Title : MICROPROCESSORS AND MICROCONTROLLERS
Course Code : 23PH/MC/MM53
Shift : I

COURSE OUTCOMES (COs)

COs	Description	CL
CO1	acquire basic knowledge on the architecture, working principles of microprocessor 8085 and microcontroller 8051.	K1
CO2	understand the BUS structure, architecture and its working, the various instructions and addressing modes, interfacing techniques and interrupt principles of microprocessor 8085, concept of embedded system.	K2
CO3	examine the instructions of microprocessor 8085 and identify the addressing mode, length of instruction of every instruction and the operation modes of the interfacing devices.	K3
CO4	analyze the working mechanism of CPU, logical flow of program, functions of interfacing devices and various interrupts of microprocessor 8085 and compare the functions of microprocessors and microcontrollers.	K4

CO5	write assembly language program in microprocessor 8085 to solve and evaluate various arithmetic and logical problems.						K5
Week	Unit No.	Content	Cognitive Level	Teaching Hours	COs	Teaching Learning Methodology	Assessment Methods
Jun 15 – 22, 2026 (Day Order 1- 6)	1	Central Processing Unit (CPU) 1.1 Bus Structure - Address, data and control system bus - Memory and I/O interface block diagram - CPU 8085.	1-5	4	1-5	Lecture	Quiz on the content taught
Jun 23 – July 1, 2026 (Day Order 1- 6)	1	1.2 Architecture: General purpose registers, ALU, accumulator, program counter, instruction register, stack, subroutines, push/pop operations, flag register.	1-5	4	1-5	Lecture	Quiz on the content taught
July 2 – July 8, 2026 (Day Order 1- 6)	2	Addressing Modes and Instruction Set 2.1 Addressing Modes: Direct, register,	1-5	4	1-5	Lecture	Quiz on the content taught

		immediate, register indirect addressing modes.					
July 9 – 16, 2026 (Day Order 1- 6)	2	2.2 Instruction Set: Data transfer group,	1-5	4	1-5	Lecture	Quiz on the content taught
July 17 – 24, 2026 (Day Order 1- 6)	3	arithmetic group, and logic group instruction.	1-5	4	1-5	Lecture	IIIrd Component – I, K1& K2 Level (20 Marks) theory Unit 1, 2
July 25 – 28, 2026 (Day Order 1- 3)	3	Software Program 3.1 Arithmetic Operations: Addition, subtraction, multiplication and division of single byte numbers.	1-5	1	1-5	Lecture cum demonstration, Problem solving	Problem solving
July 29 – Aug 3, 2026	C.A. Test - I						
Aug 4 - 6, 2026 (Day Order 4 - 6)	3	Square root of a positive single byte number. 3.2 Sorting an array in	1-5	3	1-5	Lecture cum demonstration,	Problem solving

		ascending/descending order.				Problem solving	
Aug 7 – 14, 2026 (Day Order 1- 6)	3	3.3 Conversion of BCD to HEX and vice versa.	1-5	4	1-5	Lecture cum demonstration, Problem solving	Problem solving
Aug 17 - 24, 2026 (Day Order 1- 6)	4	Interfacing I/O devices and Interrupt Circuit 4.1 Type of Interfacing Devices: Address decoding for I/O	1-5	4	1-5	Lecture	Quiz on the content taught
Aug 25 – Sep 2, 2026 (Day Order 1- 6)	4	Input and output ports.	1-5	4	1-5	Lecture	IIIrd Component – II, K3 and K5 Level (15 Marks) Program test Unit 3
Sep 3 – 11, 2026 (Day Order 1- 6)	4	4.2 8085 Interrupt circuit - Restart instructions	1-5	4	1-5	Lecture	Quiz on the content taught
Sep 15-17, 2026 (Day Order 1 - 3)	4	Hardware interrupts - Interrupt priorities.	1-5	1	1-5	Lecture	Quiz on the content

