

**STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI**

**Course Schedule: June - November 2023**

**Department** : **Physics**  
**Name/s of the Faculty** : **Sr. Josephine Diana**  
**Course Title** : **Electronics I**  
**Course Code** : **19PH/MC/EL33**  
**Shift** : **I**

<b>Week &amp; No. of hours</b>	<b>Units &amp; Topics</b>	<b>Teaching Methodology</b>	<b>Text &amp; References</b>	<b>Method of Evaluation</b>
June 19 – June 26, 2023 (Day Order 1 to 6)	Unit 1 Number Systems and Binary Concept 1.1 Introduction-Analog and Digital Signals-Digital Circuit - Decimal- Binary - Octal and Hexa Number Systems 1.2 Binary Arithmetic operations	Lecture	Mehta V.K Electronic Principles  Ambrose A & T. Vincent Devaraj, Elements of solid state electronics	
June 27 – July 04, 2023 (Day Order 1 to 6)	1.2. Principles of Addition –Subtraction-1s Complement and 2s Complement Method - Multiplication and Division.  <b>Unit 2</b> Boolean Algebra, Digital Arithmetic Circuits and K-map 2.1 Morgan’s Theorem	Lecture	Mehta V.K Electronic Principles  Ambrose A & T. Vincent Devaraj, Elements of solid state electronics	
July 05– July 12, 2023 (Day Order 1 to 6)	2.1 Implementation of Boolean Algebra into Circuits Half Adder – Full Adder – Half Subtractor – Full Subtractor - Parallel Binary Adder 2.2. Fundamental Products – SOP and POS Forms - Karnaugh Map	Lecture	Digital Fundamentals, Floyd Thomas.  Malvino Albert Paul and Leach Donald. Digital Principles and Applications.	

July 13 – July 20, 2023 (Day Order 1 to 6)	2.2 Simplification up to four Variables (SOP Only)-Don't Care Conditions - Realization of Logic Circuits	Lecture	Digital Fundamentals, Floyd Thomas.  Malvino Albert Paul and Leach Donald. Digital Principles	
July 21 – July 28, 2023 (Day Order 1 to 6)	Unit 3: Flip - Flops, Registers and Counters 3.1 Flip-Flops : RS - Clocked RS	Lecture	Digital Fundamentals, Floyd Thomas.  Malvino Albert Paul and Leach Donald. Digital Principles and Applications.	Component Problem Test
July 31 – Aug 03, 2023 (Day Order 1 to 4)	3.1 D-T-Flops and Their Truth Tables	Lecture	Digital Fundamentals, Floyd Thomas.  Malvino Albert Paul and Leach Donald. Digital Principles and Applications.	
Aug 04 – Aug 09, 2023	<b>C.A. Test – I</b>			
Aug 10 – Aug 11, 2023 (Day Order 5 to 6)	3.1 JK and Master Slave Flip-Flops and Their Truth Tables	Lecture	Digital Fundamentals, Floyd Thomas.  Malvino Albert Paul and Leach Donald. Digital Principles and Applications.	
Aug 14 – Aug 22, 2023 (Day Order 1 to 6)	3.2: Registers and Counters: Shift Registers – Right Shift - Left Shift Registers	Lecture	Digital Fundamentals, Floyd Thomas.  Digital Principles and Applications Malvino Albert Paul and Leach Donald.	Component - Quiz
Aug 23 – Aug 31, 2023 (Day Order 1 to 6)	3.2: Binary Ripple Counter (4 bit up counter-4 bit down counter) - Decade Counter.	Lecture	Digital Fundamentals, Floyd Thomas. Digital Principles and Applications Malvino Albert Paul and Leach Donald.	

Sept 01 – Sept 11, 2023 (Day Order 1 to 6)	Unit 4 Integrated Circuits – Fabrication and Characteristics 4.1 Integrated Circuit Technology: Scale of Integration –SSI, MSI, LSI, VLSI.	Lecture	Digital Fundamentals, Floyd Thomas. Digital Principles and Applications Malvino Albert Paul and Leach Donald. Mehta V.K Electronic Principles	
Sept 12 – Sept 19, 2023 (Day Order 1 to 6)	4.1 Basic Monolithic Integrated Circuits – Fabrication Process Epitaxial Growth – Masking and Etching - Diffusion of Impurities	Lecture	Digital Fundamentals, Floyd Thomas. Digital Principles and Applications Malvino Albert Paul and Leach Donald. Mehta V.K Electronic Principles	
Sept 20 - Sept 27, 2023 (Day Order 1 to 6)	4.2 Transistors for Monolithic Circuits – Monolithic Diodes – Integrated Resistors - and Capacitors	Lecture	Digital Fundamentals, Floyd Thomas. Digital Principles and Applications Malvino Albert Paul and Leach Donald. Mehta V.K Electronic Principles	
Sept 29 – Oct 03, 2023 (Day Order 1 to 3)	Unit 5 Special Purpose Diodes 5.1 Introduction - Light Emitting Diode (LED) – LED Voltage and Current- Advantages.	Lecture	Mehta V.K Electronic Principles Ambrose A & T. Vincent Devaraj, Elements of solid state electronics	
Oct 04 – Oct 09, 2023	<b>C.A. Test – II</b>			
Oct 10 – Oct 12, 2023 (Day Order 4 to 6)	5.2. Multicolor LEDs - Applications –Power Indicator –Seven Segment Display	Lecture	Mehta V.K Electronic Principles Ambrose A & T. Vincent Devaraj, Elements of solid state electronics	
Oct 13 – Oct 20, 2023 (Day Order 1 to 6)	5.2. Photo Diode – Operation Characteristics and Applications	Lecture	Mehta V.K Electronic Principles Ambrose A & T. Vincent Devaraj, Elements of solid state electronics	
Oct 25 – Oct 27, 2023 (Day Order 1 to 3)	Solving problems in LED	Lecture	Mehta V.K Electronic	

			Principles	
Oct 28- Nov 04, 2023	<b>REVISION</b>			