

Semester Lecture Plan

Name of the college: Government College of Arts, Science & Commerce, Sanquelim-Goa							
Name of Faculty: Mahendra R. Pednekar , Vidhita Parab			Subject: Physics sec				
Paper code: PHY 144		Program/Course: F.Y. B.Sc.		Division:			
Academic year: 2024- 2025		Semester: II		Total Lectures: 60			
Course Objectives: 1. To have practical knowledge of electronic components and to check them 2. To use electronic measurement instruments. 3. learn techniques of PCB designing. 4. to learn use of soldering iron,wax etc.							
Course Learning Outcome: The students will be able to 1. To identify and check electronic components. 2. To use electronic measurement instruments. 3. learn techniques of PCB designing. 4. to learn use of soldering iron,wax etc.							
Month	Lectures From: To:		No. of lectures allotted	Topic, Subtopic to be covered	Learning outcome	ICT Tools	Reference books
December	09/12/24	17/12/24	04	Using CRO and controls.	Learn to use different controls and do voltage and frequency measurement		Electronic instrumentation by David cooper

January	2/1/25	11/1/25	08	Study of Signal Generator and Multimeter	Setting desired signal -sine ,square triangular. Using multimeter		
January	13/1/25	18/1/25	04	To use Multimeter, power supplies ,Multirange digital voltmeter, Multirange digital ammeter	Using multimeter to measure current voltage resistance . studying different types power supplies		
Jan	20/1/25	25/1/25	04	Testing various components – resistors ,capacitors, inductors, ICs seven segment displays, diodes , transistors etc.	Colour codes for resistance measurement. Pin configuration of ICs		
Jan /Feb	27/1/25	1/2/25	04	Testing various components – resistors ,capacitors, inductors, ICs seven segment	Colour codes for capacitors , top view , bottom view etc		

				displays, diodes , transistors etc		
Feb	3/2/25	8/2/25	04	Checking Seven segment display	Internal diagram of seven segment display , common cathode , common anode etc	
Feb	10/2/25	15/2/25	04	Constructing a given circuit using a breadboard and testing the same for required output	Using Breadboard for checking the circuit	
February	17/2/25	22/2/25	04	Constructing a given circuit using a breadboard and testing the same for required output	Using Breadboard for checking the circuit	
Feb/march	24/2/25	1/3/25	04	Soldering and desoldering techniques	Using Soldering and desoldering gun	
March	3/3/25	8/3/25	04	Preparing front panel and back panel drawing from circuit diagram	Preparing front and back panel taking into account component dimensions	
March	10/3/25	15/3/25	04	Circuit designing, tracing artwork on copper clad board or using software .	Technique of transferring drawing on copper clad board by all methods	

					including using software and laser printer		
March	17/3/25	22/3/25	04	Using laser printer and photopaper to transfer pcb layout on copper clad board	Using laser printer and photopaper to transfer pcb layout on copper clad board		
March	24/3/25	29/3/25	04	Etching of copper clad boards using ferric chloride and commonly used materials	Learning Etching techniques		
March/April	31/3/25	5/4/25	04	Cleaning of pcb drilling mounting of components	Cleaning, drilling, mounting of components		
April	7/4/25	11/4/25	04	Soldering and testing of circuits on PCB	Checking the final completed circuit		

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