



**ST. MARY' S COLLEGE (AUTONOMOUS)**

**Re-accredited with 'A+' Grade by NAAC(4<sup>th</sup> Cycle)**

**Thoothukudi, Tamilnadu.**

**DEPARTMENT OF PHYSICS  
in collaboration with  
CORE TECHNO SOLUTIONS**

**Offers**

***CARRIER ORIENTATION COURSE***

**CIRCUIT BOARD DESIGN AND ANALYTICS**

**For the Academic Year**

**2021 - 2022**





## Career Oriented Course Syllabus

### CIRCUIT BOARD DESIGN AND ANALYTICS

Subject Code: 21CAPH51

Course duration: 30 hours

#### INTRODUCTION TO PCB DESIGN

1. Different tools used for PCB designing Soldering Methods
2. Safety Precautions
3. Details about electronics components

- Resistor, Capacitor and Inductors
- Diode
- Transistor
- IC
- Power supply
- Switching devices
- Transducers and Sensors
- Optoelectronics devices
- Connectors

#### SCHEMATIC DIAGRAM CREATION

1. Selecting
2. Parts Placing
3. Objects Wiring up
4. Making connection with terminal
5. Creating Net list

#### PCB LAYOUT DESIGN

1. Select the layers and PCB board size
2. Allocation Component arrangement
3. Auto routing / Hand routing
4. Document creation Etching process
5. Drilling process
6. Component placement and Testing

**Tool – Proteus**

## **LEARNING OUTCOMES**

1. Students will develop an understanding of the formalistic (aesthetic) aspects of designing.
2. Students will become familiar with graphic design and be able to apply this theory to real world projects.
3. Students will develop an understanding of information design and usability as it applies to interactive media projects.
4. Students will utilize coding and software tools to analyze and present data in a professional manner that could be translated to web-based or app-based media.
5. Students will write at a level suitable for a public audience in an area related to interactive media (e.g., technical writing, writing for social media, presentation of a CV)

## **TRAINING METHODOLOGY:**

### **Learning Approach**

- Guided core reading
- a series of short individual tasks
- synchronous and asynchronous discussions
- group working
- resource sharing and
- hands -on experience on website development.

### **Take away of the course**

- Soft copy of the PPT (only in PDF format) will be shared with the students.
- Worksheets & personal evaluation sheets used in the training are given to the students.

### **Infrastructural Support**

- A classroom with projector and white screen.
- Whiteboard, markers and dusters.
- Stationary as needed for the individual workshop, as per the plan shared by the trainer.
- Audio system need to be in place (as video clips will be played during the session)

**ST. MARY'S COLLEGE (AUTONOMOUS), THOOTHUKUDI.**

**CARRIER ORIENTATION COURSE**

**COURSE SCHEDULE**

**Course Title:** Circuit Board Design and Analytics

**Year :** 2021-2022

**Instructor:** Mr. A. Shunmugaraj

**Staff In-charge:** Ms. A. Valentina

<b>S. No.</b>	<b>Date</b>
1	12.07.2021
2	2.09.2021
3	23.09.2021
4	25.09.2021
5	28.09.2021
6	04.10.2021
7	06.10.2021
8	08.10.2021
9	11.10.2021
10	13.10.2021
11	20.10.2021
12	22.10.2021
13	27.10.2021

**Report of the Certificate Course 2021-2022**

**Circuit Board Design and Analytics** was offered as Certificate Course by the Department of Physics from July 2021 - October 2021 to the III year B.Sc., Physics students. Mr. A. Shunmugaraj was the Instructor and the course was held after the regular college hours from 2 p.m to 4 p.m. The students were made to appear for an oral/ written test at the end of the programme and were issued certificates with Grade levels according to their percentage of attendance. 49 students benefitted out of this programme.

**GRADE SHEET**  
**CERTIFICATE COURSE 2021 – 2022**

**Course Title:** Circuit Board Design and Analytics

**Year :** 2021-2022

**Instructor:** Mr. A. Shunmugaraj

**Staff In-charge:** Ms. A. Valentina

<b>CORE SOLUTIONS CERTIFICATE COURSE GRADE</b>		
<b>REG NO</b>	<b>NAME</b>	<b>GRADE</b>
19AUPH01	ABINAYA.M	FIRST
19AUPH02	AROCKIA MALINI.C	FIRST
19AUPH03	ATHILAKSHMI.K	SECOND
19AUPH04	BUDDHA KANYA.B	SECOND
19AUPH06	DELPHINE.B	FIRST
19AUPH07	DHASNAVIS NANTHINI.R	FIRST
19AUPH08	DHIVYA DHARSHINI.D	FIRST
19AUPH10	GRACE JOLNA.J	FIRST
19AUPH11	HARISHMA.S	FIRST
19AUPH12	JAFFRY.T	FIRST
19AUPH13	JASMINE.D.J	FIRST
19AUPH14	JENIFER CARLIN.D	FIRST
19AUPH15	JERISHA.A	FIRST
19AUPH16	JEYANTHI.S	FIRST
19AUPH17	JOICILIN FRANCINA.S	SECOND
19AUPH18	KAMALADEVI.S	SECOND
19AUPH19	KAVYA.V	SECOND
19AUPH20	LICKNOSKEBA.V	SECOND
19AUPH21	LOURDHU LEDIS SELSIYA.A	FIRST
19AUPH22	MADHUMITHA.S	FIRST
19AUPH23	MARIA JOCELIN SHEL CIA.M	FIRST
19AUPH24	MICHAEL ANGEL.J	FIRST
19AUPH25	MUTHU MARIAMMAL.N	SECOND

19AUPH26	MUTHU VALARMATHI. M	FIRST
19AUPH27	MUTHUJEEVA.T	SECOND
19AUPH28	MUTHU LAKSHMI.A	FIRST
19AUPH29	NIROJINI.V	THIRD
19AUPH30	PHILO SAHAYA SHINY.P	FIRST
19AUPH31	PRADEEPA.B	FIRST
19AUPH32	PUSHPA.A	SECOND
19AUPH33	PUSHPALAKSHMI.B	SECOND
19AUPH34	RACHEL ROSE MEGRA.P	FIRST
19AUPH35	REENA.T	SECOND
19AUPH36	REGENIYA.A	FIRST
19AUPH37	ROHINI.S	THIRD
19AUPH38	SAKTHI MAHESWARI.R	FIRST
19AUPH39	SAKTHI PRIYA.S	FIRST
19AUPH40	SELCIA.E	FIRST
19AUPH41	SELVAKANI.C	FIRST
19AUPH42	SHANMATHI.K	SECOND
19AUPH43	SILVIYA.M.A	FIRST
19AUPH44	SIVA PRIYA.M	FIRST
19AUPH45	STEFFY PEARCE.A	FIRST
19AUPH46	SUDHARKANA SERIN.S	FIRST
19AUPH47	TRINISHA.S	FIRST
19AUPH48	UMA NAGALAKSHMI.M.U	FIRST
19AUPH49	VIJAYA LAKSHMI.M	FIRST

III. B.Sc Physics (2021 - 2022)  
COC - Circuit Board Design & Analytics

Reg No	Names	Online class	21/7	23/7	25/7	28/7	4/10	6/10	8/10	11/10	13/10	20/10	22/10	4 hrs 21/10
		12/7												
1	Abinaya M	x	x	x	x	x	x	x	x	x	x	x	x	x
2	Arockia Malini C	x	x	x	x	x	x	x	x	x	x	x	x	x
3	Athi Lakshmi K	x	x	x	x	x	x	x	x	x	x	x	x	x
4	Buddha kanya B	x	x	x	x	x	x	x	x	x	x	x	x	x
6	Delphine B	x	x	x	a	a	x	a	x	x	x	x	x	x
7	Dhasnavis Nanthini R	x	x	x	a	x	x	x	x	x	x	x	a	x
8	Dhivya Dharshini .D	x	x	x	x	x	x	x	x	x	x	x	x	x
10	Grace Tolna .T	x	x	x	x	x	x	x	x	x	x	x	x	x
11	Harishma .S	x	x	x	x	x	x	x	x	x	x	a	x	x
12	Jafry .T	x	x	x	x	x	x	x	a	x	x	x	x	x
13	Jasmine .D.T	x	x	x	x	x	x	x	x	x	x	x	x	a
14	Jenifer Carlin D	x	x	x	x	x	x	x	a	x	x	x	x	x
15	Jerisha .A	x	x	x	x	x	x	x	x	a	x	x	x	x
16	Jeyanthi .s	a	x	x	x	a	x	x	x	x	x	x	x	x
17	Jotilin Francina .S	x	x	x	x	x	x	x	x	x	x	x	x	x
18	Kamaladevi .S	x	x	x	x	x	x	x	x	x	x	x	x	x
19	Kavya .V	x	x	x	x	x	x	x	x	x	x	x	x	x
20	Lickhose Keba .V	x	x	x	x	x	a	x	x	a	x	x	x	x
21	Lourdhu Ledis Selsiya .A	x	x	x	x	x	x	x	x	x	x	x	x	x
22	Madhumitha .S	x	a	x	x	x	x	a	x	a	x	x	x	x
23	Maria Jocelin Shelcia .M	x	x	x	x	x	x	x	x	x	x	x	x	x
24	Michael Angel .T	x	x	x	x	x	x	x	x	x	x	x	x	x
25	Muthu Mariammal .N	x	x	x	x	x	x	x	x	x	x	x	x	x
26	Muthu Valarmathi .M	x	x	x	x	x	x	x	x	a	x	x	x	x
27	Muthujeeva .T	a	x	x	a	x	x	x	x	OD	x	x	x	x
28	Muthu Lakshmi .A	x	x	x	x	x	x	x	x	x	x	x	x	x
29	Nirojini .V	x	x	x	x	x	x	x	x	x	x	x	x	x
30	Philb Sahaya Shiny .P	x	x	x	x	x	x	x	x	x	x	x	x	x
31	Pradeepa .B	x	x	x	x	x	x	x	x	x	x	x	x	x
32	Pushpa .A	x	x	x	x	x	x	x	x	x	x	x	x	x
33	Pushpa Lakshmi .B	x	x	x	x	x	x	x	x	x	x	x	x	x
34	Rachel Rose Megra .P	x	x	x	x	x	x	x	x	x	x	x	x	x
35	Reena .T	a	x	x	x	x	x	a	a	a	x	a	x	x
36	Regeniya .A	x	x	x	x	x	x	x	x	a	x	x	x	x
37	Rohini .S	a	x	x	x	x	a	x	x	x	x	x	x	x
38	Sakthi Maheswari .R	x	x	x	x	x	x	x	x	x	x	x	x	x
39	Sakthi Priya .M	x	x	x	x	x	x	x	x	x	x	x	x	x
40	Selcia .E	x	x	x	x	x	x	x	x	a	x	x	x	x
41	Selvakani .C	x	a	x	x	x	x	x	x	a	x	x	x	x
42	Shanmathi .K	x	x	x	x	x	x	x	x	x	x	x	x	x
43	Silviya M.A.	a	a	x	a	x	a	x	x	x	a	x	x	x

		online class 12/7	21/9	23/9	25/9	28/9	4/10	6/10	8/10	11/10	13/10	20/10	22/10	27/10
44	Siva Priya . M	X	X	X	X	X	X	X	X	X	X	X	X	X
45	Steffy Pearce . A	X	X	X	X	X	X	X	X	X	X	X	X	X
46	Sudharkana Serin . S	X	X	X	X	X	X	X	X	X	X	X	X	X
47	Trinisha . S	X	a	a	X	X	X	X	X	a	X	X	X	X
48	Uma Nagalakshmi Mu	X	X	X	X	X	a	X	X	X	a	X	X	X
49	Vijayalakshmi . M	X	X	X	X	X	X	X	X	X	X	X	X	X

Signature of Instructor.  
A. Shunmugaray

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## CARRIER ORIENTATION COURSE

### CERTIFICATE



### CERTIFICATE

This is to certify that Miss. Pradheepa.B of Final Year B.Sc,Physics has actively participated and successfully completed career oriented ON CAMPUS training program on CIRCUIT BOARD DESIGN AND ANALYTICS at ST.MARYS COLLEGE (AUTONOMOUS),THOOTHUKUDI conducted for the period of 21st Sep 2021 to 27th oct 2021 with First Grade.

S.Vinay.g.  
EXAMINER



[Signature]  
DIRECTOR

Date : 01.11.2021 Place : TUTICORIN, TN, INDIA

Grade ( Above 70% - First ; 50 to 70% - Second ; 35 to 49% - Third )  
Web:- [www.coretechnosol.com](http://www.coretechnosol.com) Email:- [info@coretechnosol.com](mailto:info@coretechnosol.com)