

# Basics of Schematic and PCB Designing

Duration : 2 Days



## Learners Choice

**Prepared For :**

Department of Electronics & Communication Engineering,  
Nandha Engineering College - Erode -52.

**2022**



## Objective

To educate participants on designing a complete circuit and schematic designs for PCB Fabrication using software. PCB Designing is an integral part of each electronics components and this training is designed to make students capable of creating their own circuit design, schematic design and PCB Design for their projects in industry grade.

## About the course

This course is designed for beginners to learn basics of electronics circuits and designing their own circuits for their projects. It helps participants to identify appropriate components, design the circuit & Schematic and generate the gerber file for PCB fabrication in the industry grade.

## Course highlights

- Introduction to Circuit designing
- Introduction to Schematic designing
- Introduction to PCB designing
- PCB Fabrication and its types.
- Components and its types.
- Design Rules.

## Course outcomes

- Participants will have a clear idea on Circuit , schematic and PCB designing.
- Participants will have an awareness on design rules and appropriate components selection.
- Participants start designing their own circuits for their projects.



## Introduction

An introductory session for the students to get a brief about the training and its outcome. An icebreaking session to make students comfortable with trainer.

## Session objective

- To help students know the practical applications, job opportunities and uses of the technology.
- Create confidence among participants to create their own projects and develop into industry grade products.

## Course content

Introduction to Electronics Designing  
Fundamentals of Electronics Designing  
Types and methods of PCB Designing  
Hands on Session on Schematic Designing  
Hands on Session on PCB Designing  
Significance of PCB Designing  
Design rules and verification.  
Gerber extraction  
BoM & PnP extraction

## Software

- Easy EDA
- Eagle
- Proteus



## **Benefit to students**

- Understandings about circuit designing and its process.
- Understandings about PCB designing and Fabrications.
- Students get an exposure on Industry level designing.
- New electronic designs and implementations can be practised by students.

## **Benefits to department**

- Encourage students to apply for different innovation events and challenges.
- Encourage students for Hackathons on electronics.
- Encourage students on Participating in product innovation contests.
- Ensuring students to create their own electronics devices in different domains.

## **Benefits to college**

- A Technical crew can be built to provide unimaginable solutions for various problems through college.
- To shall disseminate knowledge in the fields of Electronics and communication technologies.
- Understand the working and development of real-time equipments.
- Students can perform product demonstrations and visualization with the prototypes.
- In further, students can be trained in fabrication process so that they can do their projects by themselves.

# NEW TECHNOLOGY

## AICTE Approved (Internship) Training Institute

Students Can Start Their Own Business After Completing the Course  
Students Can Start Their Own Business in Mobile Phone Repairing  
and Cell Phone Industry.  
Students Can Work as a Technician in a Cell Phone Service Centre.  
Students Can Find Job in Cell Phone Industry

To,

The Principal,  
Nandha Engineering College  
Erode - Perundurai, Main Road,  
Vaikkaalmedu, Erode, Tamil Nadu 638052

Dear Sir/Madam,

It's great honour and privilege to working with you for providing high class **Smart Phone Training** at your college premises to enhance the technical knowledge and bringing a bright career opportunity in this field. We have planned out our agenda of the training and course details at your perusal. We are certified 9001:2015 institute and will be added to the certificate that we are providing to the students. We are providing hands on training in many colleges (**Engineering, Arts and Science, Polytechnic Colleges**) all over Tamilnadu. The students who attended our training program are having their Own Mobile Shops and most of the students were **Placed in Most Reputed Mobile Service Companies**. We have signed **MOU (Memorandum Of Understanding)** for **Most Reputed Colleges**. We have given **Jobs** to more than 100 students all over Tamilnadu. Kindly check it out and provide us an opportunity to present a training course to your valuable students.

Thanking you,

Your's Sincerely,

  
B. Krishnakumar

( Managing Director, New Technology)

**NANDHA ENGINEERING COLLEGE, ERODE-52(AUTONOMOUS)**  
**DEPARTMENT OF ECE**

YEAR/SEMESTER

: III YEAR/5 SEMESTER(2022-2023)ODD

ELECTIVE TYPE

: ONE CREDIT COURSE

ELECTIVE COURSE CODE:17ECI08

ELECTIVE COURSE NAME: MOBILE PHONE SERVICING AND TROUBLE SHOOTING

ASSESS BY: Mr.B.Krishnakumar, Director, New Technology, Coimbatore.

S.NO	REG.NO	STUDENT NAME	19-11-2022	19-11-2022	20-11-2022	20-11-2022
			FN	AN	FN	AN
1	20EC001	ABARNA K	K. Abarna	K. Abarna	K. Abarna	K. Abarna
2	20EC002	ABILASH R	R. Abilash	R. Abilash	R. Abilash	R. Abilash
3	20EC003	ABISHEK K	K. Abhishek	K. Abhishek	K. Abhishek	K. Abhishek
4	20EC004	ANANDH ALEXANDER S	S. Anandh	- AB -	- AB -	S. Anandh
5	20EC005	ARCHANA A T	A. Archana	A. Archana	A. Archana	A. Archana
6	20EC006	ARUNKUMAR K	K. Arun	K. Arun	K. Arun	K. Arun
7	20EC007	BAGAVATHI P	P. Bagavathi	P. Bagavathi	P. Bagavathi	P. Bagavathi
8	20EC008	BHARANI S A	A. Bharani	A. Bharani	A. Bharani	A. Bharani
9	20EC009	BRUNDHA A	A. Brundha	A. Brundha	A. Brundha	A. Brundha
10	20EC010	CHANDRU V	V. Chandru	V. Chandru	V. Chandru	V. Chandru
11	20EC011	CHANTRAMOULI T	T. Chanthramouli	T. Chanthramouli	T. Chanthramouli	T. Chanthramouli
12	20EC012	DEEPAK S	S. Deepak	S. Deepak	S. Deepak	S. Deepak
13	20EC013	DHARANIDRA A Y	A. Dharanidra	A. Dharanidra	A. Dharanidra	A. Dharanidra
14	20EC014	DHHARUN N M	M. Dhharun	M. Dhharun	M. Dhharun	M. Dhharun
15	20EC015	DHIVYADHARSHINI V	V. Dhivyadharsini	V. Dhivyadharsini	V. Dhivyadharsini	V. Dhivyadharsini
16	20EC016	GEETHA R	R. Geetha	R. Geetha	R. Geetha	R. Geetha
17	20EC017	GOBI R	R. Gobi	R. Gobi	R. Gobi	R. Gobi
18	20EC018	GOKUL S	S. Gokul	S. Gokul	S. Gokul	S. Gokul
19	20EC019	GOKULRAJ P	P. Gokulraj	P. Gokulraj	P. Gokulraj	P. Gokulraj
20	20EC020	GOKULRAJA R	R. Gokulraj	R. Gokulraj	R. Gokulraj	R. Gokulraj
21	20EC021	GOMATHI P	P. Gomathi	P. Gomathi	P. Gomathi	P. Gomathi
22	20EC022	GOPALAKANNAN V K	K. Gopal	K. Gopal	K. Gopal	K. Gopal
23	20EC023	GOPIKA R	R. Gopi	R. Gopi	R. Gopi	R. Gopi
24	20EC024	GOWTHAM P S	S. Gowtham	S. Gowtham	S. Gowtham	S. Gowtham
25	20EC025	GOWTHAM V	V. Gowtham	V. Gowtham	V. Gowtham	V. Gowtham
26	20EC026	HEMA K R	R. Hema	R. Hema	R. Hema	R. Hema
27	20EC027	INDHU V J	J. Indhu	J. Indhu	J. Indhu	J. Indhu
28	20EC028	JAI SARATHA B	B. Jaisarath	B. Jaisarath	B. Jaisarath	B. Jaisarath
29	20EC029	JANA M	M. Jana	M. Jana	M. Jana	M. Jana
30	20EC030	JAYAPRASATH K	K. Jayapr	K. Jayapr	K. Jayapr	K. Jayapr

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			19.11.22 FN	19.11.22 AN	20.11.22 FN	20.11.22 AN
31	20EC032	KARTHIKAIBALAN V P	Karthika	V P K	V P K	V P K
32	20EC034	KEERTHA DHARSHINI B	B. Keerthy	B. Keerthy	B. Keerthy	B. Keerthy
33	20EC035	LOGANATHAN S	S. Loganathan	S. Loganathan	S. Loganathan	S. Loganathan
34	20EC036	LOGANATHAN V	V. Log	V. Log	V. Log	V. Log
35	20EC037	LOGESH K	K. Log	K. Log	K. Log	K. Log
36	20EC038	MANIBHARATHI A	A. Mani	A. Mani	A. Mani	A. Mani
37	20EC039	MANOJ A	A. Manoj	A. Manoj	A. Manoj	A. Manoj
38	20EC041	MATHUMITHA A	A. Mathu	A. Mathu	A. Mathu	A. Mathu
39	20EC042	MEHALA B	B. Mehal	B. Mehal	B. Mehal	B. Mehal
40	20EC043	MOHAMMED ABUTHAHIR BASITH A	A. Basith	A. Basith	A. Basith	A. Basith
41	20EC045	MONIKKA B	B. Moni	B. Moni	B. Moni	B. Moni
42	20EC046	NADHIYA R	R. Nadhiya	R. Nadhiya	R. Nadhiya	R. Nadhiya
43	20EC047	NANDHAKUMAR P	P. Nandha	P. Nandha	P. Nandha	P. Nandha
44	20EC048	NAVEEN S	S. Naveen	S. Naveen	S. Naveen	S. Naveen
45	20EC049	NAVITHA N	N. Navitha	N. Navitha	N. Navitha	N. Navitha
46	20EC050	PAVISHNIKA B	B. Pavish	B. Pavish	B. Pavish	B. Pavish
47	20EC051	POORNIMA M	M. Poorni	M. Poorni	M. Poorni	M. Poorni
48	20EC052	PRADEEP S	S. Pradeep	S. Pradeep	S. Pradeep	S. Pradeep
49	20EC053	PRAVEENA K	K. Prave	K. Prave	K. Prave	K. Prave
50	20EC054	RAAHUL S	S. Raahul	S. Raahul	S. Raahul	S. Raahul
51	20EC055	RAGUL C	C. Ragul	C. Ragul	C. Ragul	C. Ragul
52	20EC056	RANJINI R	R. Ranji	R. Ranji	R. Ranji	R. Ranji
53	20EC057	RANJITH M	M. Ranji	M. Ranji	M. Ranji	M. Ranji
54	20EC058	RITHIK P	P. Rithik	P. Rithik	P. Rithik	P. Rithik
55	20EC059	RITHIKA V	V. Rithika	V. Rithika	V. Rithika	V. Rithika
56	20EC060	RIYAZ KHAN M	M. Riyaz	M. Riyaz	M. Riyaz	M. Riyaz
57	20EC061	SABARISH M	M. Sabari	M. Sabari	M. Sabari	M. Sabari
58	20EC062	SAMUVEL R	R. Samu	R. Samu	R. Samu	R. Samu
59	20EC063	SANDHIYA G	G. Sandhya	G. Sandhya	G. Sandhya	G. Sandhya
60	20EC064	SANJAY E	E. Sanjay	E. Sanjay	E. Sanjay	E. Sanjay
61	20EC065	SANJAY G	G. Sanjay	G. Sanjay	G. Sanjay	G. Sanjay

			19.11.22 FN	19.11.22 AN	20.11.22 FN	20.11.22 AN
62	20EC066	SANTHIYA S	S. Sathya	S. Sathya	S. Sathya	S. Sathya
63	20EC067	SANTHOSH M	M. Sathya	M. Sathya	M. Sathya	M. Sathya
64	20EC068	SATHISHKUMAR P	P. Sathya	P. Sathya	P. Sathya	P. Sathya
65	20EC069	SATHISHKUMAR P	P. Sathya	P. Sathya	P. Sathya	P. Sathya
66	20EC070	SEKAR V	V. Sekar	V. Sekar	V. Sekar	V. Sekar
67	20EC071	SETHUPATHI S	S. Sathya	S. Sathya	S. Sathya	S. Sathya
68	20EC072	SHAIK THAYYABA	S. Thayyaba	S. Thayyaba	S. Thayyaba	S. Thayyaba
69	20EC073	SHANMUGA PRIYA K	K. Shanmuga	K. Shanmuga	K. Shanmuga	K. Shanmuga
70	20EC074	SHARNIGAA S	S. Sharniga	S. Sharniga	S. Sharniga	S. Sharniga
71	20EC075	SIVASHANKAR R	R. Sathya	R. Sathya	R. Sathya	R. Sathya
72	20EC076	SOBIKA R	R. Sobika	R. Sobika	R. Sobika	R. Sobika
73	20EC077	SOUNDAR V	V. Soundar	V. Soundar	V. Soundar	V. Soundar
74	20EC079	SRINIVAS J	J. Srinivas	J. Srinivas	J. Srinivas	J. Srinivas
75	20EC080	SUBA R	R. Suba	R. Suba	R. Suba	R. Suba
76	20EC081	SUBASREE P	P. Subasree	P. Subasree	P. Subasree	P. Subasree
77	20EC082	SUDHAN V	V. Sudhan	V. Sudhan	V. Sudhan	V. Sudhan
78	20EC083	SUDHARSANA VIGNESHWARAN A	A. Sudharsana	A. Sudharsana	A. Sudharsana	A. Sudharsana
79	20EC084	SURYAPRASATH G	G. Suryaprasath	G. Suryaprasath	G. Suryaprasath	G. Suryaprasath
80	20EC085	TAMILARASU V	V. Tamilarasu	V. Tamilarasu	V. Tamilarasu	V. Tamilarasu
81	20EC086	THARUNKUMAR S	S. Tharunkumar	S. Tharunkumar	S. Tharunkumar	S. Tharunkumar
82	20EC087	VAISHNAVI B	B. Vaishnavi	B. Vaishnavi	B. Vaishnavi	B. Vaishnavi
83	20EC088	VIGNESH A	A. Vignesh	A. Vignesh	A. Vignesh	A. Vignesh
84	20EC089	VIGNESH M	M. Vignesh	M. Vignesh	M. Vignesh	M. Vignesh
85	20EC090	VIKNEISHWARAN T	T. Vikneishwaran	T. Vikneishwaran	T. Vikneishwaran	T. Vikneishwaran
86	20EC091	VINCENT JOEYAL P	P. Vincent Joeyal	P. Vincent Joeyal	P. Vincent Joeyal	P. Vincent Joeyal
87	20EC092	VISHNU C	C. Vishnu	C. Vishnu	C. Vishnu	C. Vishnu
88	20EC093	VISHNURAJ T	T. Vishnuraj	T. Vishnuraj	T. Vishnuraj	T. Vishnuraj
89	20EC094	YASHWANTHBABU A L	L. Yashwanthbabu	L. Yashwanthbabu	L. Yashwanthbabu	L. Yashwanthbabu
90	20EC095	YUVARAJA P	P. Yuvaraja	P. Yuvaraja	P. Yuvaraja	P. Yuvaraja
91	20ECT01	JANANI N	N. Janani	N. Janani	N. Janani	N. Janani
92	20ECL01	AKILESHWARAN K	K. Akileshwaran	K. Akileshwaran	K. Akileshwaran	K. Akileshwaran
93	20ECL02	ARJUNSHAJI T	T. Arjunshaji	T. Arjunshaji	T. Arjunshaji	T. Arjunshaji
94	20ECL03	ASWIN KUMAR G	G. Aswin Kumar	G. Aswin Kumar	G. Aswin Kumar	G. Aswin Kumar
95	20ECL04	BINDHYA P	P. Bindhya	P. Bindhya	P. Bindhya	P. Bindhya



			19.11.22 FN	19.11.22 AN	20.11.22 FN	20.11.22 AN
96	20ECL05	DEVADHARSHINI M	Devadharshini M	Devadharshini M	Devadharshini M	Devadharshini M
97	20ECL06	DINESH P	P. Dinesh	P. Dinesh	P. Dinesh	P. Dinesh
98	20ECL07	HARIKRISHNA C H	H. Krishna	H. Krishna	H. Krishna	H. Krishna
99	20ECL09	KARTHIKEYAN S	S. Karthikeyan	S. Karthikeyan	S. Karthikeyan	S. Karthikeyan
100	20ECL10	KOWSALYA D	D. Kowsalya	D. Kowsalya	D. Kowsalya	D. Kowsalya
101	20ECL11	KRISHNA KUMAR S	S. Krishna Kumar	S. Krishna Kumar	S. Krishna Kumar	S. Krishna Kumar
102	20ECL14	MOULIDHARAN G	G. Maulidharan	G. Maulidharan	G. Maulidharan	G. Maulidharan
103	20ECL15	MYDEEPAN V	V. Mydeepan	V. Mydeepan	V. Mydeepan	V. Mydeepan
104	20ECL16	NAVEEN M	M. Naveen	M. Naveen	M. Naveen	M. Naveen
105	20ECL17	NIKIL A	A. Nikhil	A. Nikhil	A. Nikhil	A. Nikhil
106	20ECL18	PANATH AMBROSE ABISHEK A	A. Abhishek	A. Abhishek	A. Abhishek	A. Abhishek
107	20ECL19	POORNAVIJAY N	N. Poornavijay	N. Poornavijay	N. Poornavijay	N. Poornavijay
108	20ECL21	RAMYA M	M. Ramya	M. Ramya	M. Ramya	M. Ramya
109	20ECL22	SANTHOSH M	M. Santhosh	M. Santhosh	M. Santhosh	M. Santhosh
110	20ECL23	SASIKUMAR S	- NOT Registered -			
111	20ECL24	SHANMUGA SUNDARAM S	S. Shanmuga	S. Shanmuga	S. Shanmuga	S. Shanmuga
112	20ECL25	SIDDESH S	- NOT Registered -			
113	20ECL26	SIVANANDHAM N V	N. V. Sivanandham	N. V. Sivanandham	N. V. Sivanandham	N. V. Sivanandham
114	20ECL27	SRIRAMAKRISHNAN N	N. Sri Ramakrishnan	N. Sri Ramakrishnan	N. Sri Ramakrishnan	N. Sri Ramakrishnan
115	20ECL29	SURESH KUMAR M	M. Suresh	M. Suresh	M. Suresh	M. Suresh
116	20ECL31	VARUN V	V. Varun	- AB -	- AB -	V. Varun
117	20ECL33	VISHNU G M	M. Vishnu	M. Vishnu	M. Vishnu	M. Vishnu
118	20ECL34	VISHNUVARTHAN J	J. Vishnuvarthan	J. Vishnuvarthan	J. Vishnuvarthan	J. Vishnuvarthan



1. [Karthi. R]  
 [Surya. K]  
 [B. Babu]

G. Rathore  
 one credit i/c

S. Karthi  
 23/11/22  
 HOD/ECE

20/bh/22  
 4. [Rajesh Kumar]



**NANDHA ENGINEERING COLLEGE, ERODE-52(AUTONOMOUS)**  
DEPARTMENT OF ECE

YEAR/SEMESTER

: II YEAR/3 SEMESTER(2022-2023)ODD

ELECTIVE TYPE

: ONE CREDIT COURSE

ELECTIVE COURSE CODE:17EC101

ELECTIVE COURSE NAME: PCB DESIGN

ASSESS BY: Mr.Mr.N.SREE TAKSHIN,TRODO 3D,AVINASHI,TIRUPPUR-641654

S.NO	REG.NO	STUDENT NAME	19.11.2022	19.11.2022	20.11.2022	20.11.2022
			FN	AN	FN	AN
1	21EC001	Abishek. A	A. Abishek	A. Abishek	A. Abishek	A. Abishek
2	21EC003	Abitha. S	S. Abitha	S. Abitha	S. Abitha	S. Abitha
3	21EC004	Afsar Faruk. J	J. Afsar	J. Afsar	J. Afsar	J. Afsar
4	21EC005	Aravind. M	M. Aravind	M. Aravind	M. Aravind	M. Aravind
5	21EC006	Ashwanth. R	R. Ashwanth	R. Ashwanth	R. Ashwanth	R. Ashwanth
6	21EC007	Balashanth. J. S	J.S. Balashanth	J.S. Balashanth	J.S. Balashanth	J.S. Balashanth
7	21EC008	Bharath. D. M	M. Bharath	M. Bharath	M. Bharath	M. Bharath
8	21EC009	Bharath. J. K	K. Bharath	K. Bharath	K. Bharath	K. Bharath
9	21EC010	Bharath Kumar. S	S. Bharath	S. Bharath	S. Bharath	S. Bharath
10	21EC011	Chandru. M	M. Chandru	M. Chandru	M. Chandru	M. Chandru
11	21EC012	Darshana. K	K. Darshana	K. Darshana	K. Darshana	K. Darshana
12	21EC013	Dharaneesh. M	M. Dharaneesh	M. Dharaneesh	M. Dharaneesh	M. Dharaneesh
13	21EC014	Dharanidharan. R. K	R.K. Dharanidharan	R.K. Dharanidharan	R.K. Dharanidharan	R.K. Dharanidharan
14	21EC015	Dhinesh. A	A. Dhinesh	A. Dhinesh	A. Dhinesh	A. Dhinesh
15	21EC016	Dinesh Kumar. V. S	S.V. Dinesh	S.V. Dinesh	S.V. Dinesh	S.V. Dinesh
16	21EC017	Faizudeen. T	T. Faizudeen	T. Faizudeen	T. Faizudeen	T. Faizudeen
17	21EC018	Gayalvanan. V	V. Gayalvanan	V. Gayalvanan	V. Gayalvanan	V. Gayalvanan
18	21EC019	Gokul. R	R. Gokul	R. Gokul	R. Gokul	R. Gokul
19	21EC020	Gokul. S	S. Gokul	S. Gokul	S. Gokul	S. Gokul
20	21EC021	Gokulakrishnan. C	C. Gokulakrishnan	C. Gokulakrishnan	C. Gokulakrishnan	C. Gokulakrishnan
21	21EC022	Gokulprasath. S. R	S.R. Gokulprasath	S.R. Gokulprasath	S.R. Gokulprasath	S.R. Gokulprasath
22	21EC023	Gopinath. S	S. Gopinath	S. Gopinath	S. Gopinath	S. Gopinath
23	21EC024	Gowtham. M	M. Gowtham	M. Gowtham	M. Gowtham	M. Gowtham
24	21EC025	Guhan. A	A. Guhan	A. Guhan	A. Guhan	A. Guhan

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			FN	AN	FN	AN
25	21EC026	Haribalaji. S	S. Haribalaji	S. Haribalaji	S. Haribalaji	S. Haribalaji
26	21EC027	Haripriya. M	M. Haripriya	M. Haripriya	M. Haripriya	M. Haripriya
27	21EC028	Harivignesh. K. S. M	K. S. M. Harivignesh	K. S. M. Harivignesh	K. S. M. Harivignesh	K. S. M. Harivignesh
28	21EC029	Harshavarthini. G	G. Harshavarthini	G. Harshavarthini	G. Harshavarthini	G. Harshavarthini
29	21EC030	Heera Lal. B	- AB -	- AB -	- AB -	- AB -
30	21EC031	Indhira Kumaaran. S	S. Indhira Kumaaran	S. Indhira Kumaaran	S. Indhira Kumaaran	S. Indhira Kumaaran
31	21EC032	Jarsi. B	B. Jarsi	B. Jarsi	B. Jarsi	B. Jarsi
32	21EC033	Jaswanth. T	T. Jaswanth	T. Jaswanth	T. Jaswanth	T. Jaswanth
33	21EC034	Jayadev. G	G. Jayadev	G. Jayadev	G. Jayadev	G. Jayadev
34	21EC035	Jayalakshmi. J	J. Jayalakshmi	J. Jayalakshmi	J. Jayalakshmi	J. Jayalakshmi
35	21EC036	Jayashri. M	M. Jayashri	M. Jayashri	M. Jayashri	M. Jayashri
36	21EC037	Jerin. J	J. Jerin	J. Jerin	J. Jerin	J. Jerin
37	21EC038	Joshiya. S. R	S. R. Joshiya	S. R. Joshiya	S. R. Joshiya	S. R. Joshiya
38	21EC039	Kabish Kannan. D	D. Kabish Kannan	D. Kabish Kannan	D. Kabish Kannan	D. Kabish Kannan
39	21EC040	Kabishkumar. M	M. Kabishkumar	M. Kabishkumar	M. Kabishkumar	M. Kabishkumar
40	21EC041	Kavipriya. S	- AB -	- AB -	- AB -	- AB -
41	21EC042	Kaviya. R	R. Kaviya	R. Kaviya	R. Kaviya	R. Kaviya
42	21EC043	Keerthana. R	R. Keerthana	R. Keerthana	R. Keerthana	R. Keerthana
43	21EC044	Keerthivarmn. S	S. Keerthivarmn	S. Keerthivarmn	S. Keerthivarmn	S. Keerthivarmn
44	21EC045	Koushik. K	K. Koushik	K. Koushik	K. Koushik	K. Koushik
45	21EC046	Manikandan. M	M. Manikandan	M. Manikandan	M. Manikandan	M. Manikandan
46	21EC047	Mouli. K	K. Mouli	K. Mouli	K. Mouli	K. Mouli
47	21EC048	Mouleswar. S	S. Mouleswar	S. Mouleswar	S. Mouleswar	S. Mouleswar
48	21EC049	Mohamed Nowfal. J	J. Mohamed Nowfal	J. Mohamed Nowfal	J. Mohamed Nowfal	J. Mohamed Nowfal
49	21EC050	Moopazar Shreeram Bharathidesan	S. Moopazar Shreeram Bharathidesan	S. Moopazar Shreeram Bharathidesan	S. Moopazar Shreeram Bharathidesan	S. Moopazar Shreeram Bharathidesan
50	21EC051	Mounika. S	S. Mounika	S. Mounika	S. Mounika	S. Mounika

		19.11.22 FN	19.11.22 AN	20.11.22 FN	20.11.22 AN
51	21EC053	Navaneetha Krishnan. K	[Signature]	[Signature]	[Signature]
52	21EC054	Naveen Kumar. G	[Signature]	[Signature]	[Signature]
53	21EC055	Nithishkumar. C	[Signature]	[Signature]	[Signature]
54	21EC056	Paul Earnest. J	[Signature]	[Signature]	[Signature]
55	21EC057	Prudeep. C	[Signature]	[Signature]	[Signature]
56	21EC058	Pranav Akash. D	C. Prud.	C. Prud.	C. Prud.
57	21EC059	Praveen. M (10.02.2003)	[Signature]	[Signature]	[Signature]
58	21EC060	Praveen. M (15.04.2003)	[Signature]	[Signature]	[Signature]
59	21EC061	Raja sibi. R	[Signature]	[Signature]	[Signature]
60	21EC062	Ranganathan. G	R.R.j G. Ranganathan	R.R.j G. Ranganathan	R.R.j G. Ranganathan
61	21EC063	Ranjani. G. C	[Signature]	[Signature]	[Signature]
62	21EC064	Ranjith. M	[Signature]	[Signature]	[Signature]
63	21EC065	Rukumani. M	[Signature]	[Signature]	[Signature]
64	21EC066	Ruthramoorthy. S	[Signature]	[Signature]	[Signature]
65	21EC067	Sabarinathan. S	[Signature]	[Signature]	[Signature]
66	21EC069	Sahana Fariz. S	[Signature]	[Signature]	[Signature]
67	21EC070	Sanjeev. K	[Signature]	[Signature]	[Signature]
68	21EC071	Sahana. R	[Signature]	[Signature]	[Signature]
69	21EC072	Sankar. P	[Signature]	[Signature]	[Signature]
70	21EC073	Selva Vishnu. M	[Signature]	[Signature]	[Signature]
71	21EC074	Senthil Kumar. T	[Signature]	[Signature]	[Signature]
72	21EC075	Shanjeev. V	[Signature]	[Signature]	[Signature]
73	21EC076	Sharmika. V	[Signature]	[Signature]	[Signature]
74	21EC078	Sharmila. S	[Signature]	[Signature]	[Signature]
75	21EC079	Sivananthini. V	[Signature]	[Signature]	[Signature]



19.11.22 20.11.22 20.11.22 20.11.22  
FN AN FN AN

76	21EC080	Sowmiya. V	V.Sowmya	V.Sowmya	V.Sowmya	V.Sowmya
77	21EC082	Sowtharyan. D	D.S	D.S	D.S	D.S
78	21EC083	Sridhar. M	M.S	M.S	M.S	M.S
79	21EC084	Sriharini. K	K.S	K.S	K.S	K.S
80	21EC085	Seivarshini. S	S.S	S.S	S.S	S.S
81	21EC086	Subha Sree, M	M.Subha	M.Subha	M.Subha	M.Subha
82	21EC087	Sunil Kumar. S	S.S	S.S	S.S	S.S
83	21EC088	Suvathi. K	K.S	K.S	K.S	K.S
84	21EC089	Swathi. R	R.Swathi	R.Swathi	R.Swathi	R.Swathi
85	21EC090	Swedha. V	V.S	V.S	V.S	V.S
86	21EC091	Tamilselvan. A. K	A.K	A.K	A.K	A.K
87	21EC092	Thinakar. B	B	B	B	B
88	21EC093	Thillai Arasan. M. K	M.K	M.K	M.K	M.K
89	21EC094	Thirukumaran. B	B.TK	B.TK	B.TK	B.TK
90	21EC095	Varshini. S	S.V	S.V	S.V	S.V
91	21EC096	Vasanth. D. S	D.S	D.S	D.S	D.S
92	21EC098	Vidhya. K	K.Vidhya	K.Vidhya	K.Vidhya	K.Vidhya
93	21EC099	Vikram. L	L.V	L.V	L.V	L.V
94	21EC100	Vimal. S. V	S.V	S.V	S.V	S.V
95	21EC101	Vishnu. D	D.V	D.V	D.V	D.V
96	21EC102	Vishnu. J	J.V	J.V	J.V	J.V
97	21EC103	Vishnupriya. Y	Y.V	Y.V	Y.V	Y.V
98	21EC104	Yazhini. S	S.Y	S.Y	S.Y	S.Y
99	21EC105	YogeshKumar. S	S.YK	S.YK	S.YK	S.YK

Dr. K. Ramesh  
20/11/22  
LEARNERS CHOICE  
TUP-08  
one-credit

1. SREE TAKSHIN.N
2. SOCRATINGAM SARAVANAN

20/11/2022

S. K. R. M. T.  
23.11.22  
HOD/ECE



# NANDHA ENGINEERING COLLEGE (Autonomous)

Affiliated to Anna University Chennai ✦ Approved by AICTE ✦ Accredited by NBA-New Delhi

Pitchandampalayam. (P.O), Vaikkalmedu, Erode - Perundurai Road, Erode - 638 052

Phone : 04294-225585, 223711, 223722, 226393 Mobile : 73737 23722 Fax : 04294 - 224787

www.nandhaengg.org

E.mail : info@nandhaengg.org

Dr.N.Rengarajan, B.Sc., B.Tech., M.E., Ph.D.,  
PRINCIPAL

03.03.2023

To

The Center Head,  
Livewire,  
Erode.

Dear Sir,

Sub: Conduction of CVAC – Reg

Greetings from Nandha Engineering College (Autonomous), Erode

It is proposed to conduct Value Added Course for Department of Electronics and Communication Engineering from 23.3.2023 to 26.3.2023 under the topic Embedded System Design using PIC Microcontroller. Hence, I request you to accept the proposal and provide resource persons to conduct the same for the benefit of our students.

Thanking You,



  
Principal  
**PRINCIPAL**  
Nandha Engineering Coll  
(Autonomous)  
Erode - 638 052.

Dear Madam,

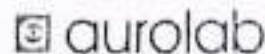
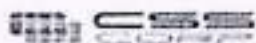
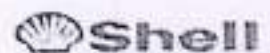
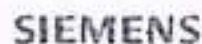
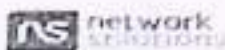
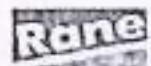
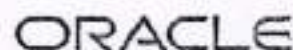
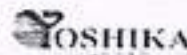
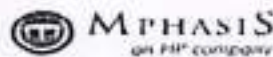
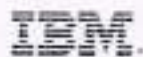
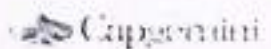
At the outset, we thank you very much for the kind courtesy extended towards us. We are pleased to provide you with our Company profile and the proposal for value added training program.

LIVEWIRE - a division of CADD Centre Training Services is a well - established and innovative training organization serving customers across the country.

LIVEWIREs training solutions in IT, CORE, ITES, Engineering Design and Process Management (EDO/EPO), Knowledge Process Outsourcing (KPO), Business Process Management (BPM), IT Service Management (ITSM) and Executive Management skill enhancement has imparted over thousands of learners since inception.

LIVEWIRE hopes to be among the leading training organizations in the world within this decade. In the last 36 years, we have trained over 9, 50,000 Professionals & students and about 7500 corporate houses. Our Courses are industry specific and we impart training on start to end skill sets.

### Corporate Association



**Faculty Credential:**

- 7+ Years Experienced and Certified Trainers
- LIVEWIRE Certified

**Terms and Conditions:**

● This Offered fee applicable for no. of students should be 150+

Be assured of our continued support. Should you require any further details/clarifications, please do not hesitate to call/email me. You may please reach me on my mobile/cell no: 9688231532 E-mail: [livewireerode195@gmail.com](mailto:livewireerode195@gmail.com)

Look forward to positive response.

Thanks & Regards,

Prabhakaran R

● Centre Head

LIVEWIRE ERODE



**17ECI07 – EMBEDDED SYSTEM DESIGN USING PIC MICROCONTROLLER**

**COURSE OBJECTIVES AND OUTCOMES:**

Course Objectives		Course Outcomes	
1.0	To introduce the concepts of Embedded Systems and PIC.	1.1	The students will be able to understand the basics of Embedded Systems and PIC microcontroller.
2.0	To introduce the different interfacing methods.	2.1	The students will be able to interface ADC, External memory devices and Motor to PIC.
3.0	To understand the basic ASM and Embedded C Programming concepts.	3.1	The students will be able to understand the basic programming concepts and develop programs for simple applications.
4.0	To understand the advanced ASM and Embedded C Programming concepts.	4.1	The students will be able to develop programs for Serial Communication, ADC, EEPROM and Motor based Interfacing Programs.

<b>MODULE I INTRODUCTION TO EMBEDDED SYSTEM AND PIC</b>	<b>(8)</b>
Definitions, Requirements and Applications of Embedded Systems – IC Manufacturing Company details- PIC Microcontroller- Pin Configuration of PIC.	
<b>MODULE II INTERFACING</b>	<b>(7)</b>
Serial Communication- Introduction, Register details, Analog to Digital Converter- Functions, Block Diagram, Registers, External Memory interfacing- RAM, ROM, EEPROM, Motor Interfacing.	
<b>MODULE III ASM AND EMBEDDED C PROGRAMMING I</b>	<b>(8)</b>
Bit oriented, Byte oriented, Lateral and Control Oriented- I/O based Interfacing Programs, LED based interfacing Programs, Seven Segment LED based Interfacing Programs.	
<b>MODULE IV ASM AND EMBEDDED C PROGRAMMING II</b>	<b>(7)</b>
LCD based Interfacing Programs, Timers and Interrupt based Interfacing Programs, Serial Communication, ADC, EEPROM, Motor based Interfacing Programs.	
<b>TOTAL (L+P: 30) = 30 PERIODS</b>	



# NANDHA ENGINEERING COLLEGE

(Autonomous)

ERODE - 638 052.

**ELECTRONICS AND COMMUNICATION ENGINEERING  
IN ASSOCIATION WITH**

**INSTITUTION OF ELECTRONICS AND TELECOMMUNICATION ENGINEERS**

Ph : 04294 - 225585, 223711

Fax No : 04294 - 224787

e-mail : [info@nandhaengg.org](mailto:info@nandhaengg.org)

Website : <http://nandhaengg.org>

**Thiru V. SHANMUGAN**

Chairman

Sri Nandha Educational Trust

**Thiru S. NANDHAKUMAR PRADEEP**

Secretary

Sri Nandha Educational Trust

**Thiru S. THIRUMOORTHY**

Secretary

Nandha Educational Institutions

**Dr.SARUMUGAM**

CEO

Nandha Educational Institutions

## PATRON

Dr. N.RENGARAJAN

PRINCIPAL

Dr.J.SENTHIL

DIRECTOR

## CONVENORS

Dr.C.N.MARIMUTHU

DEAN/R&D

Dr.S.Kavitha

HOD/ ECE

## CO-ORDINATOR

Mr.C.PRABHU, APECE

## INVITATION

### CVAC

The Management, Principal and the  
Department of Electronics and Communication Engineering  
Cordially invite you for the

**Value added Course**

on

**"EMBEDDED SYSTEM DESIGN USING PIC MICROCONTROLLER "**

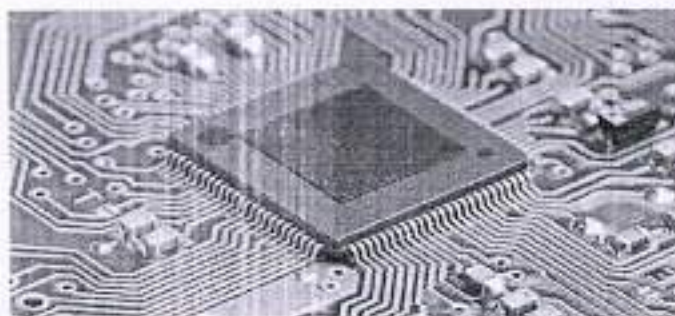
by

**Mr.R.PRABHAKARAN,**

**CENTER HEAD,**

**LIVEWIRE,**

**ERODE**



Date: 23.3.2023 - 26.3.2023

Time: 09.30 AM to 04.00 PM

Venue: Simulation LAB, Block 2, NEC

NANDHA ENGINEERING COLLEGE(AUTONOMOUS), ERODE -52

DEPARTMENT OF ECE

ACADEMIC YEAR: 2022- 2023(EVEN SEM)

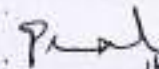
17EC107-EMBEDDED SYSTEM DESIGN USING PIC  
MICROCONTROLLER

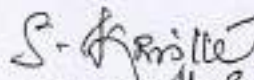
S.NO.	REG.NO	STUDENT NAME
1	21EC001	Abishek. A
2	21EC003	Abitha. S
3	21EC004	Afsar Faruk. J
4	21EC005	Aravind. M
5	21EC006	Ashwanth. R
6	21EC007	Balashasanth. J. S
7	21EC008	Bharath. D. M
8	21EC009	Bharath. J. K
9	21EC010	Bharath Kumar. S
10	21EC012	Darshana. K
11	21EC013	Dharaneesh. M
12	21EC014	Dharanidharan. R. K
13	21EC015	Dhinesh. A
14	21EC016	Dhinesh Kumar. V. S
15	21EC017	Fajzudeen. T
16	21EC018	Gayalvanan. V
17	21EC019	Gokul. R
18	21EC020	Gokul. S
19	21EC021	Gokulakrishnan. C
20	21EC022	Gokulprasath. S. R
21	21EC023	Gopinath. S
22	21EC024	Gowtham. M
23	21EC025	Guhan. A
24	21EC026	Haribalaji. S
25	21EC027	Haripriya. M

26	21EC028	Harivignesh. K. S. M
27	21EC029	Harshavarthini. G
28	21EC030	Heera Lal. B
29	21EC031	Indhira Kumaaran. S
30	21EC032	Jarsi. B
31	21EC033	Jaswanth. T
32	21EC034	Jayadev. G
33	21EC035	Jayalakshmi. J
34	21EC036	Jayashri. M
35	21EC037	Jerin. J
36	21EC038	Joshiya. S. R
37	21EC039	Kabish Kannan. D
38	21EC040	Kabishkumar. M
39	21EC042	Kaviya. R
40	21EC043	Keerthana. R
41	21EC044	Keerthivarman. S
42	21EC045	Koushik. K
43	21EC046	Manikandan. M
44	21EC047	Mouli. K
45	21EC048	Moulieswar. S
46	21EC049	Mohamed Nowfal. J
47	21EC050	Moopanan Shreeram Bharathidasan
48	21EC051	Mounika. S
49	21EC053	Navaneetha Krishnan. K
50	21EC054	Naveen Kumar. G
51	21EC055	Nitishkumar. C
52	21EC056	Paul Earnest. J
53	21EC057	Pradeep. C
54	21EC058	Pranav Akash. D
55	21EC059	Praveen. M
56	21EC060	Praveen. M
57	21EC061	Raja sibi. R
58	21EC062	P

60	21EC064	Ranjith. M
61	21EC065	Rukumani. M
62	21EC066	Ruthramoorthy. S
63	21EC067	Sabarinathan. S
64	21EC069	Sahana Fariz. S
65	21EC070	Sanjeev. K
66	21EC071	Sahana. R
67	21EC072	Sankar. P
68	21EC073	Selva Vishnu. M
69	21EC074	Senthil Kumar. T
70	21EC075	Shanjeev. V
71	21EC076	Sharmika. V
72	21EC078	Sharmila. S
73	21EC079	Sivananthini. V
74	21EC080	Sowmiya. V
75	21EC082	Sowntharyan. D
76	21EC083	Sridhar. M
77	21EC084	Sriharini. K
78	21EC085	Srivarshini. S
79	21EC086	Subha Sree. M
80	21EC087	Sunil Kumar. S
81	21EC088	Suvathi. K
82	21EC089	Swathi. R
83	21EC090	Swedha. V
84	21EC091	Tamilselvan. A. K
85	21EC092	Thinakar. B
86	21EC093	Thillai Arasan. M. K
87	21EC094	Thirukumaran. B
88	21EC095	Varshini. S
89	21EC096	Vasanth. D. S
90	21EC098	Vidhya. K
91	21EC099	Vikram. L
92	21EC100	Vimal. S. V

94	21EC102	Vishnu. J
95	21EC103	Vishnupriya. Y
96	21EC104	Yazhini. S
97	21EC105	YogeshKumar. S
98	21ECL01	Aravindraaj K
99	21ECL02	Chandru S
100	21ECL03	Dhivagaran N
101	21ECL04	Gokulraj S
102	21ECL06	Janarthanan S R
103	21ECL07	Jeeva S
104	21ECL08	Jeevanantham K
105	21ECL09	Jeevanantham S
106	21ECL10	Karthik vetrivel S
107	21ECL11	Kavi Barath M
108	21ECL12	Logaprasanth S
109	21ECL14	Mayurinathan A
110	21ECL16	Ravisrinivasan M
111	21ECL17	SaravanaKumar P
112	21ECL20	Selvaganapathy R
113	21ECL22	Sri Sakthivel K
114	21ECL26	Vikram P
115	21ECL27	Vishnu K

C. P.   
16/3/23

S.   
HOD/ECE 16.3.23



NANDHA ENGINEERING COLLEGE, ERODE-52(AUTONOMOUS)  
DEPARTMENT OF ECE

YEAR/SEMESTER : H YEAR/IV SEMESTER(2022-2023)EVEN  
ELECTIVE TYPE : CVAC  
ELECTIVE COURSE CODE: 17EC107  
ELECTIVE COURSE NAME: EMBEDDED SYSTEM DESIGN USING PIC MICROCONTROLLER  
ASSESS BY:

S.NO	REG.NO	STUDENT NAME	23.3.2023	24.3.2023	25.3.2023	26.3.2023
1	21EC001	Abishek. A	A. Abishek	A. Abishek	A. Abishek	A. Abishek
2	21EC003	Abitha. S	S. Abitha	S. Abitha	S. Abitha	S. Abitha
3	21EC004	Afsar Faruk. J	J. Afsar Faruk	J. Afsar Faruk	J. Afsar Faruk	J. Afsar Faruk
4	21EC005	Aravind. M	M. Aravind	M. Aravind	M. Aravind	M. Aravind
5	21EC006	Ashwanth. R	R. Ashwanth	R. Ashwanth	R. Ashwanth	R. Ashwanth
6	21EC007	Baluchasanth. J. S	J.S. Baluchasanth	J.S. Baluchasanth	J.S. Baluchasanth	J.S. Baluchasanth
7	21EC008	Bharath. D. M	D.M. Bharath	D.M. Bharath	D.M. Bharath	D.M. Bharath
8	21EC009	Bharath. J. K	J.K. Bharath	J.K. Bharath	J.K. Bharath	J.K. Bharath
9	21EC010	Bharath Kumar. S	S. Bharath Kumar	S. Bharath Kumar	S. Bharath Kumar	S. Bharath Kumar
10	21EC012	Darshana. K	K. Darshana	K. Darshana	K. Darshana	K. Darshana
11	21EC013	Dharmneesh. M	M. Dharmneesh	M. Dharmneesh	M. Dharmneesh	M. Dharmneesh
12	21EC014	Dharmnidharan. R. K	R.K. Dharmnidharan	R.K. Dharmnidharan	R.K. Dharmnidharan	R.K. Dharmnidharan
13	21EC015	Dhinesh. A	A. Dhinesh	A. Dhinesh	A. Dhinesh	A. Dhinesh
14	21EC016	Dhinesh Kumar. V. S	V.S. Dhinesh Kumar	V.S. Dhinesh Kumar	V.S. Dhinesh Kumar	V.S. Dhinesh Kumar
15	21EC017	Faizadeen. T	T. Faizadeen	T. Faizadeen	T. Faizadeen	T. Faizadeen
16	21EC018	Gayalvanan. V	V. Gayalvanan	V. Gayalvanan	V. Gayalvanan	V. Gayalvanan
17	21EC019	Gokul. R	R. Gokul	R. Gokul	R. Gokul	R. Gokul
18	21EC020	Gokul. S	S. Gokul	S. Gokul	S. Gokul	S. Gokul
19	21EC021	Gokulakrishnan. C	C. Gokulakrishnan	C. Gokulakrishnan	C. Gokulakrishnan	C. Gokulakrishnan
20	21EC022	Gokulprasath. S. R	S.R. Gokulprasath	S.R. Gokulprasath	S.R. Gokulprasath	S.R. Gokulprasath
21	21EC023	Gopinath. S	S. Gopinath	S. Gopinath	S. Gopinath	S. Gopinath
22	21EC024	Gowtham. M	M. Gowtham	M. Gowtham	M. Gowtham	M. Gowtham
23	21EC025	Guhan. A	A. Guhan	A. Guhan	A. Guhan	A. Guhan
24	21EC026	Haribalaji. S	S. Haribalaji	S. Haribalaji	S. Haribalaji	S. Haribalaji

25	21EC027	Haripriya. M	H. Haripriya	H. Haripriya	H. Haripriya	H. Haripriya
26	21EC028	Harivignesh. K. S. M	H. Vignesh	H. Vignesh	H. Vignesh	H. Vignesh
27	21EC029	Harshavarthini. G	G. Harshavathi	G. Harshavathi	G. Harshavathi	G. Harshavathi
28	21EC030	Heera Lal. B	B. Heeralal	B. Heeralal	B. Heeralal	B. Heeralal
29	21EC031	Indhira Kumaaran. S	S. Indhira Kumaran	S. Indhira Kumaran	S. Indhira Kumaran	S. Indhira Kumaran
30	21EC032	Jarsi. B	B. Jarsi	B. Jarsi	B. Jarsi	B. Jarsi
31	21EC033	Jaswanth. T	T. Jaswanth	T. Jaswanth	T. Jaswanth	T. Jaswanth
32	21EC034	Jayadev. G	G. Jayadev	G. Jayadev	G. Jayadev	G. Jayadev
33	21EC035	Jayalakshmi. J	J. Jayalakshmi	J. Jayalakshmi	J. Jayalakshmi	J. Jayalakshmi
34	21EC036	Jayashri. M	M. Jayashri	M. Jayashri	M. Jayashri	M. Jayashri
35	21EC037	Jerin. J	J. Jerin	J. Jerin	J. Jerin	J. Jerin
36	21EC038	Joshiya. S. R	S.R. Joshiya	S.R. Joshiya	S.R. Joshiya	S.R. Joshiya
37	21EC039	Kabish Kannan. D	D. Kabish Kannan	D. Kabish Kannan	D. Kabish Kannan	D. Kabish Kannan
38	21EC040	Kabishkumar. M	M. Kabishkumar	M. Kabishkumar	M. Kabishkumar	M. Kabishkumar
39	21EC042	Kaviya. R	R. Kaviya	R. Kaviya	R. Kaviya	R. Kaviya
40	21EC043	Keerthana. R	R. Keerthana	R. Keerthana	R. Keerthana	R. Keerthana
41	21EC044	Keerthivarman. S	S. Keerthi Varman	S. Keerthi Varman	S. Keerthi Varman	S. Keerthi Varman
42	21EC045	Koushik. K	K. Koushik	K. Koushik	K. Koushik	K. Koushik
43	21EC046	Manikandan. M	M. Manikandan	M. Manikandan	M. Manikandan	M. Manikandan
44	21EC047	Mouli. K	K. Mouli	K. Mouli	K. Mouli	K. Mouli
45	21EC048	Moulieswar. S	S. Moulieswar	S. Moulieswar	S. Moulieswar	S. Moulieswar
46	21EC049	Mohamed Nowfal. J	J. Mohamed Nowfal	J. Mohamed Nowfal	J. Mohamed Nowfal	J. Mohamed Nowfal
47	21EC050	Moopnar Shreeram Bharathidasan	Bharathidasan Moopnar Shreeram	Bharathidasan Moopnar Shreeram	Bharathidasan Moopnar Shreeram	Bharathidasan Moopnar Shreeram
48	21EC051	Mounika. S	S. Mounika	S. Mounika	S. Mounika	S. Mounika
49	21EC053	Navaneetha Krishnan. K	K. Navaneetha Krishnan	K. Navaneetha Krishnan	K. Navaneetha Krishnan	K. Navaneetha Krishnan
50	21EC054	Naveen Kumar. G	G. Naveen Kumar	G. Naveen Kumar	G. Naveen Kumar	G. Naveen Kumar



51	21EC055	Nitishkumar. C	Dethu	Dethu	Dethu	Dethu
52	21EC056	Paul Earnest. J	Paul	Paul	Paul	Paul
53	21EC057	Pradeep. C	C. Pradeep	C. Pradeep	C. Pradeep	C. Pradeep
54	21EC058	Pranav Akash. D	Pranav	Pranav	Pranav	Pranav
55	21EC059	Praveen. M	M. Praveen	M. Praveen	M. Praveen	M. Praveen
56	21EC060	Praveen. M	M. Praveen	M. Praveen	M. Praveen	M. Praveen
57	21EC061	Raja sibi. R	R. Raja	R. Raja	R. Raja	R. Raja
58	21EC062	Ranganathan. G	G. Ranganathan	G. Ranganathan	G. Ranganathan	G. Ranganathan
59	21EC063	Ranjani. G. C	G.C. Ranjani	G.C. Ranjani	G.C. Ranjani	G.C. Ranjani
60	21EC064	Ranjith. M	M. Ranjith	M. Ranjith	M. Ranjith	M. Ranjith
61	21EC065	Rukumani. M	M. Rukumani	M. Rukumani	M. Rukumani	M. Rukumani
62	21EC066	Ruthramoorthy. S	S. Ruthramoorthy	S. Ruthramoorthy	S. Ruthramoorthy	S. Ruthramoorthy
63	21EC067	Sabarinathan. S	S. Sabarinathan	S. Sabarinathan	S. Sabarinathan	S. Sabarinathan
64	21EC069	Sahana Fariz. S	S. Sahana Fariz	S. Sahana Fariz	S. Sahana Fariz	S. Sahana Fariz
65	21EC070	Sanjeev. K	K. Sanjeev	K. Sanjeev	K. Sanjeev	K. Sanjeev
66	21EC071	Sahana. R	R. Sahana	R. Sahana	R. Sahana	R. Sahana
67	21EC072	Sankar. P	P. Sankar	P. Sankar	P. Sankar	P. Sankar
68	21EC073	Selva Vishnu. M	M. Selva Vishnu	M. Selva Vishnu	M. Selva Vishnu	M. Selva Vishnu
69	21EC074	Senthil Kumar. T	T. Senthil Kumar	T. Senthil Kumar	T. Senthil Kumar	T. Senthil Kumar
70	21EC075	Shanjeev. V	V. Shanjeev	V. Shanjeev	V. Shanjeev	V. Shanjeev
71	21EC076	Sharmika. V	V. Sharmika	V. Sharmika	V. Sharmika	V. Sharmika
72	21EC078	Sharmila. S	S. Sharmila	S. Sharmila	S. Sharmila	S. Sharmila
73	21EC079	Sivananthini. V	V. Sivananthini	V. Sivananthini	V. Sivananthini	V. Sivananthini
74	21EC080	Sowmiya. V	V. Sowmiya	V. Sowmiya	V. Sowmiya	V. Sowmiya
75	21EC082	Sowntharyan. D	D. Sowntharyan	D. Sowntharyan	D. Sowntharyan	D. Sowntharyan

	21EC083	Bridhar, M	Sridhar	Sridhar	Sridhar	Sridhar
	21EC084	Sriharini, K	<del>Sriharini</del>	<del>Sriharini</del>	<del>Sriharini</del>	<del>Sriharini</del>
78	21FC085	Srivarshini, S	S. Srivarshini	S. Srivarshini	S. Srivarshini	S. Srivarshini
79	21EC086	Subha Sree, M	Subha, M	Subha, M	Subha, M	Subha, M
80	21EC087	Sunil Kumar, S	<del>Sunil</del>	<del>Sunil</del>	<del>Sunil</del>	<del>Sunil</del>
81	21EC088	Suvathi, K	K. Suvathi	K. Suvathi	K. Suvathi	K. Suvathi
82	21EC089	Swathi, R	R. Swathi	R. Swathi	R. Swathi	R. Swathi
83	21EC090	Swedha, V	V. Sw.	V. Sw.	V. Sw.	V. Sw.
84	21EC091	Tamilselvan, A. K	Tamil	Tamil	Tamil	Tamil
85	21EC092	Thinakar, B	B.	B.	B.	B.
86	21EC093	Thillai Arasan, M. K	Thillai	Thillai	Thillai	Thillai
87	21EC094	Thirukumaran, B	B. Thiruk.	B. Thiruk.	B. Thiruk.	B. Thiruk.
88	21EC095	Varshini, S	<del>Varshini</del>	<del>Varshini</del>	<del>Varshini</del>	<del>Varshini</del>
89	21EC096	Vasanth, D. S	D.S.V.	D.S.V.	D.S.V.	D.S.V.
90	21EC098	Vidhya, K	Vidhyak	Vidhyak	Vidhyak	Vidhyak
91	21EC099	Vikram, L	L. Vikram	L. Vikram	L. Vikram	L. Vikram
92	21EC100	Vimal, S. V	S. V.	S. V.	S. V.	S. V.
93	21EC101	Vishnu, D	D. Vishnu	D. Vishnu	D. Vishnu	D. Vishnu
94	21EC102	Vishnu, J	J. Vishnu	J. Vishnu	J. Vishnu	J. Vishnu
95	21EC103	Vishnupriya, Y	Y. Vishnu	Y. Vishnu	Y. Vishnu	Y. Vishnu
96	21EC104	Yashini, S	S. Yashini	S. Yashini	S. Yashini	S. Yashini
97	21EC105	YogeshKumar, S	S. Yogesh	S. Yogesh	S. Yogesh	S. Yogesh
98	21ECL01	Aravindraj K	(Ar)	(Ar)	(Ar)	(Ar)
99	21ECL02	Chandru S	S. Chandru	S. Chandru	S. Chandru	S. Chandru
100	21ECL03	Dhivagaran N	N. Dhiv.	N. Dhiv.	N. Dhiv.	N. Dhiv.
101	21ECL04	Gokulraj S	S. Gokul	S. Gokul	S. Gokul	S. Gokul
102	21ECL06	Janarthanan S R	S.R. Jan.	S.R. Jan.	S.R. Jan.	S.R. Jan.
103	21ECL07	Jeeva S	S. Jeeva	S. Jeeva	S. Jeeva	S. Jeeva
104	21ECL08	Jeevanantham K	K. Jeevan.	K. Jeevan.	K. Jeevan.	K. Jeevan.
105	21ECL09	Jeevanantham S	S. Jeeva	S. Jeeva	S. Jeeva	S. Jeeva
106	21ECL10	Karthik vetrivel S	S. Karthik	S. Karthik	S. Karthik	S. Karthik
107	21ECL11	Kavi Barath M	M. Barath	M. Barath	AB	AB
108	21ECL12	Logaprasanth S	S. Loga	S. Loga	S. Loga	S. Loga
109	21ECL14	Mayurinathan A	A. Mayur	A. Mayur	A. Mayur	A. Mayur

(120)  
REG. NO :

NAME :

**NANDHA ENGINEERING COLLEGE, ERODE - 52**  
(An Autonomous Institution, Affiliated to Anna University, Chennai)  
**DEPARTMENT OF ELECTRONICS AND COMMUNICATION  
ENGINEERING**  
*Academic Year (2022-2023) Even Sem*  
**17ECI07-EMBEDDED SYSTEM DESIGN USING PIC MICROCONTROLLER**

- 1 What is the size of 8051 Microcontroller?  
A) 4 Bit microcontroller  
B) 8 Bit microcontroller  
C) 16 Bit microcontroller  
D) None of these
  
- 2 What is meant by Harvard architecture?  
A) It has the separate pathway or buses for interaction between the CPU and memory  
B) It can't perform the parallel operation  
C) The instruction and data to be accessed concurrently  
D) 1&3
  
- 3 What is the size of the program memory in 8051?  
A) 4Kbyte  
B) 8Kbyte  
C) 2Kbyte  
D) 12Kbyte
  
- 4 How many timers are presented in 8051 controller?  
A) Two 32-bit timer/counter  
B) Timer0 is 8-bit/ Timer1 is 16-bit  
C) Two 8-bit timer/counter  
D) Two 16-bit timer/counter
  
- 5 How many interrupts are presented in 8051 controller?  
A) 5 Interrupt  
B) 12 Interrupt  
C) 6 Interrupt  
D) None of these
  
- 6 What is the use of TIM0 & TIM1 bits in TMOD register ?  
A) Mode selection bits  
B) Gate enable bits  
C) Timer/counter selection bits  
D) Enabling the external peripheral
  
- 7 In special function register what is the address for TCON & TMOD ?  
A) 88 & 89  
B) 8A & 8D  
C) A0 & B0  
D) 82 & 83
  
- 8 What is the function of Org 000BH?  
A) Starting address of the memory  
B) To activate Timer0 interrupt  
C) Interrupt handler  
D) Return from interrupt
  
- 9 While configuring the RS232 with microcontroller why do we need to connect  
A) MAX232 line driver ic ?  
B) Decimal to Hexadecimal

- C) BCD to binary value
- D) To convert TTL logic levels to RS232 binary values  
To convert TTL logic levels to RS232 voltage levels, and vice versa

10 In 16\*2 LCD what are the commonly used commands?

- A) 0X08,0X0E,0X0C
- B) 0X38, 0X06, 0X01
- C) 0X28,0X20,0X06
- D) 0X01,0X38

11 What is the status of control pins while passing the command to LCD?

- A) RS=0,R/W=0,EN=1
- B) RS=1,R/W=0,EN=1
- C) RS=1,R/W=0,EN=0
- D) None of these

12 Among the following which one is the examples for definition section?

- A) /\*this is single comment \*/
- B) #include<reg51.h>
- C) #include<stdio.h>
- D) #define constant\_name constant\_value

13 Which of the following architecture has 49 instructions?

- A) Base line PIC
- B) PIC18
- C) Enhanced mid-range
- D) mid-range

14 Which one is not a families of baseline?

- A. PIC10                      B. PIC12
- C. PIC16                      D. PIC18

15 Speed of baseline PIC microcontroller is?

- A 5 MIPS                      B. 7 MIPS
- C. 8 MIPS                      D. Upto 16 MIPS

16 Features of mid range PIC microcontroller is?

- A) SPI
- B) I2C
- C) Op-Amps
- D) All the above

17 What is the size of data memory in PIC16F877A?

- A. 368 byte                      B. 128 byte
- C. 512 byte                      D. 144 byte

18 Low voltage programming input?

- A) PGD
- B) PGC
- C) PGM
- D) PSP

19 What is the status of bank select register while choosing the bank??

- A) RP1=1,RP0=0
- B) RP1=1,RP0=1
- C) RP1=0,RP0=0
- D) RP1=0,RP0=1

20 In status register IRP bit act as low mean?

- A) Bank 1 and 2 are active
- B) Bank 2 and 3 are active
- C) Bank 1 and 3 are active
- D) Bank 0 and 2 are active

21 Which port is not a 8 bit wide bi-directional?

- A) PORT A
- B) PORT C
- C) PORT B
- D) PORT D

23 Size of Timer 0 and Timer 2 is?

- A) 4 Bit
- B) 8 Bit
- C) 16 Bit
- D) 32 Bit

24 PIC16F877A microcontroller has the \_\_\_\_ interrupt sources?

- A. 8            B. 6
- C. 15          D. 32

26 What is the syntax for one dimensional array?

- A) int item[2][3][4]
- B) datatype array\_name[row\_size][column\_size];
- C) int b[3][3]
- D) datatype array\_name[];

28 What is the function of while loop?

- A) Process is executed while condition false
- B) Code to be executed repeatedly based on a given Boolean condition
- C) It's a nested if condition
- D) None of these

29 Among the following which one is the example for synchronous communication?

- A) Video Conferencing, Telephonic Conversations
- B) E-mail
- C) Letters
- D) Simple duplex communication

30 List out the stages of pipeline which is used in ARM7?

- A) Fetch, Execute, Write
- B) Execute, Memory, Write
- C) Fetch, Issue, Decode
- D) Fetch, Decode, Execute

- 31 How many pipelines are presented in ARM9?  
A) 6 Stages of pipeline  
B) 5 Stages of pipeline  
C) 9 Stages of pipeline  
D) 3 Stages of pipeline
- 32 FIQ Stands for?  
A) Fast Instruction Request  
B) Fast Interrupt handler  
C) Fast interrupt Request  
D) Fast Information Request
- 33 In following statements which one is the example for user mode?  
A) It's only used for critical condition  
B) Coin Box  
C) Boiler system  
D) Room temperature
- 34 In following statements which one is the example for FIQ mode?  
A) Coin Box  
B) System interrupt mode  
C) Room temperature  
D) Boiler heating system
- 35 LPC2148 controller has the inbuilt?  
A) I2C  
B) 3 I2C  
C) 1 I2C  
D) 2 I2C
- 36 What is the other name of I2C protocol?  
A) Two Wire Interface  
B) Inter Integrated Circuit  
C) Serial communication ports  
D) Serial Data Line address
- 37 What is the use of PLL0 in LPC214X?  
A) Generate a clock signal for controller  
B) Generate the System clock  
C) Generate a clock signal for USB  
D) To activate PLL
- 38 FCCO stands for?  
A) Fundamentals of components controller  
B) Frequency of CPU clock Controller  
C) Frequency of Crystal Oscillator  
D) Frequency of Current Controlled Oscillator
- 39 The frequency of CPU clock or the output of PLL is?  
A)  $F_{CCO} = F_{OSC} * M * 2 * P$   
B)  $CCLK = M * P * 2$

- C)  $CCLK = M * FOSC$
- D)  $FOSC = FCCO / (M * 2 * P)$

40 What is the standard range of CCLK while PLL is used in LPC2148 MCUs?

- A) 10MHZ to 25MHZ
- B) 10MHZ to 60MHZ
- C) 156MHZ to 320MHZ
- D) 60MHZ

41 How many interrupt request inputs are there in LPC2148 controller?

- A) 16 Interrupt request
- B) 21 Interrupt request input
- C) 32 Interrupt request input
- D) 15 Interrupt request input

42 Non Vectored IRQ has the?

- A) Lowest priority
- B) Does not have unique address, So it's jumps to default address
- C) It has the middle level priority with unique slot address
- D) 1 & 2

43 What is the use of RAW interrupt status register?

- A) It provides the status of both vectored IRQ and non vectored IRQ
- B) It provides the status of both IRQ and FIQ
- C) It provides the status about unique slot address
- D) It provides the status of EINT3

44 To choose appropriate PINSEL for activating the TXD0 and RXD0?

- A)  $PINSEL2 = 0X00000007$
- B)  $PINSEL2 = 0X00000003$
- C)  $PINSEL1 = 0X00000005$
- D)  $PINSEL0 = 0X00000005$

45 AT stands for?

- A) AT mega
- B) Attention
- C) Antenna
- D) Latitude

46 In following which command is used for setting text message mode?

- A)  $AT+CMGF=1$
- B)  $AT+CMGL=1$
- C)  $AT+CMGR=1$
- D)  $AT+CMGS=1$

47 What is the ASCII value for enter key?

- A) 0X0A
- B) 0X0D
- C) 0X13
- D) None of these

48 RFID stands for?

- A) Electronically stored frequency identifier
- B) Interrogating Radio waves
- C) Radio-Frequency Identifier
- D) None of these

49 GPS coordinates are formed by two components that are?

- A) Latitude and Longitude
- B) North and South
- C) East and West
- D) Arithmetic and Logical

50 LPC2148 controller has the inbuilt \_\_\_\_\_ ADC?

- A) 8 bit successive approximation
- B) 10 bit successive approximation
- C) ADC0808
- D) ADC0809



NANDHA ENGINEERING COLLEGE (AUTONOMOUS), ERODE -52  
OFFICE OF CONTROLLER OF EXAMINATIONS  
ELECTIVE SUBJECT STUDENT LIST (UG) - IV Semester  
Degree: BE/B.Tech/M.E/MCA/MBA



DATE : 26/3/2023

Branch		ELECTRONICS AND COMMUNICATION ENGINEERING		
Elective Subject Type		CVAC		
Elective Subject Code		17ECI07		
Elective Subject Title		EMBEDDED SYSTEM DESIGN USING PIC MICROCONTROLLER		
S.No	Reg. No	Student Name	MARKS (50)	MARKS IN WORDS
1	21EC001	Abishek. A	47	FOUR SEVEN
2	21EC003	Abitha. S	44	FOUR FOUR
3	21EC004	Afsar Faruk. J	46	FOUR SIX
4	21EC005	Aravind. M	47	FOUR SEVEN
5	21EC006	Ashwanth. R	41	FOUR ONE
6	21EC007	Balashasanth. J. S	45	FOUR FIVE
7	21EC008	Bharath. D. M	46	FOUR SIX
8	21EC009	Bharath. J. K	47	FOUR SEVEN
9	21EC010	Bharath Kumar. S	43	FOUR THREE
10	21EC012	Darshana. K	47	FOUR SEVEN
11	21EC013	Dharaneesh. M	45	FOUR FIVE
12	21EC014	Dharanidharan. R. K	48	FOUR EIGHT
13	21EC015	Dhinesh. A	47	FOUR SEVEN
14	21EC016	Dhinesh Kumar. V. S	47	FOUR SEVEN
15	21EC017	Faizudeen. T	47	FOUR SEVEN
16	21EC018	Gayalvanan. V	46	FOUR SIX
17	21EC019	Gokul. R	47	FOUR SEVEN
18	21EC020	Gokul. S	47	FOUR SEVEN
19	21EC021	Gokulakrishnan. C	46	FOUR SIX
20	21EC022	Gokulprasath. S. R	46	FOUR SIX
21	21EC023	Gopinath. S	41	FOUR ONE
22	21EC024	Gowtham. M	46	FOUR SIX
23	21EC025	Guhan. A	46	FOUR SIX
24	21EC026	Haribalaji. S	47	FOUR SEVEN
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62	21EC066	Ruthramoorthy. S	41	FOUR ONE
63	21EC067	Sabarinathan. S	39	THREE NINE
64	21EC069	Sahana Fariz. S	43	FOUR THREE
65	21EC070	Sanjeev. K	39	THREE NINE
66	21EC071	Sahana. R	49	FOUR NINE

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89	21EC096	Vasanth. D. S	42	FOUR TWO
90	21EC098	Vidhya. K	45	FOUR FIVE
91	21EC099	Vikram. L	40	FOUR ZERO
92	21EC100	Vimal. S. V	43	FOUR THREE
93	21EC101	Vishnu. D	43	FOUR THREE
94	21EC102	Vishnu. J	43	FOUR THREE
95	21EC103	Vishnupriya. Y	47	FOUR SEVEN
96	21EC104	Yazhini. S	44	FOUR FOUR
97	21EC105	YogeshKumar. S	44	FOUR FOUR
98	21ECL01	Aravindraaj K	43	FOUR THREE
99	21ECL02	Chandru S	46	FOUR SIX
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108	21ECL12	Logaprasanth S	46	FOUR SIX
109	21ECL14	Mayurinathan A	44	FOUR FOUR
110	21ECL16	Ravisrinivasan M	43	FOUR THREE
111	21ECL17	SaravanaKumar P	44	FOUR FOUR
112	21ECL20	Selvaganapathy R	45	FOUR FIVE
113	21ECL22	Sri Sakthivel K	45	FOUR FIVE
114	21ECL26	Vikram P	44	FOUR FOUR
115	21ECL27	Vishnu K	45	FOUR FIVE

*S. Reddy*  
26/03/23

*Ala*  
26/03/23

INDUSTRY CO-ORDINATOR



COMPANY SEAL



# NANDHA ENGINEERING COLLEGE (Autonomous)

Affiliated to Anna University, Chennai. Approved by AICTE, NBA  
Perundurai, Erode - 638 052.

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

In association with

LIVEWIRE

**LIVEWIRE**  
FOR LIVE CAREERS

## CERTIFICATE FOR CVAC

This is to certify that DARSHANA.K, II - YEAR of  
ELECTRONICS AND COMMUNICATION ENGINEERING has attended Value  
Added Course in "Embedded System Design using PIC Microcontroller" from 23.03.2023 to 26.03.2023.

CO-ORDINATOR

HOD / ECE

  
26/03/23

RESOURCE PERSON



# NANDHA ENGINEERING COLLEGE (Autonomous)

Affiliated to Anna University, Chennai. Approved by AICTE, NBA  
Perundurai, Erode - 638 052.

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

in association with

LIVEWIRE

**LIVEWIRE**  
FOR LIVE CAREERS

## CERTIFICATE FOR CV&C

This is to certify that SHANJEEV. V, II - YEAR of  
ELECTRONICS AND COMMUNICATION ENGINEERING has attended Value  
Added Course in "Embedded System Design using PIC Microcontroller" from 23.03.2023 to 26.03.2023.

CO-ORDINATOR

HOD / ECB

RESOURCE PERSON

**Bernard Arockiam P**

**Technical Trainer**

Email: [bernaonline@gmail.com](mailto:bernaonline@gmail.com)

Mobile: +91-9043327124

---

**Experience Summary**

Total Experience: 8+Year

**Job Profile:**

- Worked as Technical Trainer in NIIT
- Trained fresh recruits in various companies.
- Conducted hands on workshops for final year engineering and science students.
- Conducted live workshops on mobile app development using android.
- Programming Knowledge in C, C++, Core Java & Advanced Java, Android, Python, PHP, Web designing.

**Skill Sets:**

- Programming Languages
- Office Automation: Ms Word, PowerPoint, Advanced Excel
- Designing & Editing Softwares: Corel Draw, Photoshop

**Educational Qualification:**

- M.C.A., M.B.A

STUDENT FEEDBACK ON EMBEDDED SYSTEM DESIGN USING PIC  
MICROCONTROLLER

Feedback on Embedded design using PIC microcontroller.

- The embedded system design shows us the importance of microcontrollers usage with hardware and software.
- It reflects us the awareness of constraints and optimization consideration.
- It was an beneficial on our core subjects and it takes us to the better understanding about microcontrollers.
- They executed an good teaching about embedded system using microcontroller.
- We thank college for us to arrange an such successfull course to learn.

\*I Thank college for the opportunity for learn this Subject

\*Your efforts in creating a positive and Supportive learning Environment.

\*I am still using a skill you taught me.

If you have to put someone on pedestal can never tell where his influence stops.

\*I want to congratulate you on your determination finish this Subject.





**NANDHA ENGINEERING COLLEGE (AUTONOMOUS),**

**LIVEWIRE**  
FOR LIVE CAREERS

Erode - 638 052 .

**FEEDBACK ON EMBEDDED SYSTEM DESIGN USING PIC**  
**MICROCONTROLLER**

I had an opportunity to be a Resource person for value added course on Embedded System Design Using PIC Microcontroller. I appreciate the efforts taken by the institution in organizing this program which will surely enhance the knowledge. My sincere gratitude for wonderful hospitality. All the best.

*AL*  
26/03/23

**RESOURCE PERSON**



# NANDHA ENGINEERING COLLEGE (AUTONOMOUS),

Erode - 638 052.

Department of ELECTRONICS & COMMUNICATION ENGINEERING

## CVAC ON EMBEDDED SYSTEM DESIGN USING PIC

### MICROCONTROLLER

CVAC on Embedded System Design Using Pic Microcontroller was conducted from 23.3.2023 to 26.3.2023 by LIVEWIRE. During the first day, introductory topics of Embedded System Design were covered and they gave clear explanation about PIC microcontroller. In the second day, introduction to different interfacing methods and techniques was discussed. Last two days, the practical session or assembly language programming and embedded C programming was conducted. At the end of the day, a test was conducted to check the understanding ability of the students. The main outcome of this course is to motivate the students to carry out final year projects based on embedded systems for various applications.





# NANDHA ENGINEERING COLLEGE (Autonomous)

Attached to Anna University Chennai ✦ Approved by AICTE ✦ Accredited by NBA-New Delhi

Pitchandampalayam, (P.O), Vaikkalmedu, Erode - Perundurai Road, Erode - 638 052

Phone : 04294-225585, 223711, 223722, 226393 Mobile : 73737 23722 Fax : 04294 - 224787

www.nandhaengg.org

E.mail : info@nandhaengg.org

Dr.N.Rengarajan, B.Sc., B.Tech., M.E., Ph.D.,  
PRINCIPAL

03.03.2023

To

The Managing Director,  
Innova Skill Technology,  
Bangalore.

Dear Sir,

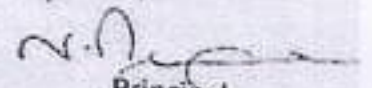
Sub: Conduction of CVAC – Reg

Greetings from Nandha Engineering College (Autonomous), Erode

It is proposed to conduct Value Added Course for Department of Electronics and Communication Engineering from 23.3.2023 to 26.3.2023 under the topic **Industrial Automation Using PLC / SCADA**. Hence, I request you to accept the proposal and provide resource persons to conduct the same for the benefit of our students.

Thanking You,



  
Principal

**PRINCIPAL**  
Nandha Engineering Coll  
(Autonomous)  
Erode - 638 052.

## Value Added Course - Proposal

Dear sir/ Mam,

Thanks for your interest in engaging Innova Skill Technology! In pursuant to our discussions, we have prepared the following detailed proposal for your review and kind consideration. Given our experience and specific expertise in technical training for college students, we are confident that we can work with you to achieve your aims and goals.

All of us at Innova Skill Technology consider the following guiding principles as supreme.

Provide highest quality educational practices to all the participants. Deliver the participants more than what has been assured of. Assure the best of the services and personalized attention every time and at all times.

We wish to conduct the Value added Course - "Industrial Automation Using PLC/SCADA" for the students belonging to ECE II year in your college campus, at a nominal fee rate.

### Students will Learn

- ❖ Students will learn Architecture and Industrial Automation Using PLC/SCADA

### Course Description

- Industrial Automation Using PLC/SCADA course curriculum is designed to develop the participants with all required skills required to work with Peripheral Interface Controllers (PIC microcontrollers) at both the hardware and software fronts. PIC Microcontroller is a microcontroller manufactured by Microchip Technology. It is a compact microcomputer designed to monitor the operations of embedded systems in most vehicles, machines, and devices. It is used in systems, where it is required to control certain processes, obtain information from external sources, and to interpret collected information.
- The objective of this course is to give in-depth knowledge of 8-bit PIC Microcontroller with their programming so that student can design real-time projects on Embedded Systems
- Students of Electronics & Telecommunication, Instrumentation, and Electrical engineering or anyone who wishes to work in the PIC microcomputer area, can opt for this PIC microcontroller course.
- This course enables the aspirants to work on the architecture, pin diagram, and interfacing of various real-time devices such as LED, LCD, Relay, Buzzer, Switches, motor, etc. It also enables them to work using hardware and software tools required for the development of an

embedded system using PIC Microcontroller. Exposure to Embedded C programs is a part of this course.

- By undergoing this course candidates meet the embedded system industry requirements. They learn to program the electronic circuits to work for different tasks.

### **Requirements:**

- ✓ Seminar Hall / Laboratory Hall having the enough capacity to conduct Hands-on Session for all Participants.
- ✓ Good Quality public Address System ideally two cordless mikes will be required.
- ✓ Projector / Screen along with Black/White for teaching and presentation purposes.
- ✓ One small stereo jack card connect to laptop for its sound system
- ✓ Hospitality for Expert

### **WORKSHOP – OFFER**

Department	Domain/Topic	Pricing
ECE	Value Added Course – 4 Days	Rs.25,000 /-

### **TERMS and CONDITIONS:**

1. **Batch:** Batch Size shall be minimum of and limited to 65 Participants
2. **Student Faculty Ratio:** There shall be Two Dedicated Faculties for the program
3. **Taxes:** Inclusive
4. **Certificate of Participation** will be provided
5. **Payment:** End of the Program
6. **Mode of Payment:** Cash or Cheque in the favour of "Mikrosun Technology"

## 17ECI09 - INDUSTRIAL AUTOMATION USING PLC/SCADA

### Unit 1 Introduction to PLC

Need and tools of automation, Evolution of PLC, Architecture PLC Block diagram and working, Selection of PLC, Types of PLCs, Advantage, limitations and applications of PLCs, Networking of PLCs.

---

### Unit 2 PLC Hardware

Input and Output Modules for PLC – Working, description, wiring details, specifications, interfacing Instruction set for given operation, Ladder Programming, Ladder logics for some applications.

---

### Unit 3 PLC Programming and Applications

Programming Languages for PLCs, PLC programming standard IEC61131, Relay type Instructions – Timer, Counter, Arithmetic Operation, Data handling instructions. PLC based applications as motor control, traffic light, etc.

---

## Unit 4 Introduction to SCADA

Application area of SCADA : Architecture-Elements, block diagram of SCADA : Types of SCADA, MTU, RTU Functions, Communications in SCADA, Applications of SCADA.

---

## Unit 5 SCADA Interfacing and Applications

Interfacing of SCADA with PLC, Creating SCADA Display, Application of SCADA For ON-OFF Lamp. Traffic light control, water level control, motor control, etc.

---



# NANDHA ENGINEERING COLLEGE

(Autonomous)

ERODE - 638 052.

**ELECTRONICS AND COMMUNICATION ENGINEERING  
IN ASSOCIATION WITH**

**INSTITUTION OF ELECTRONICS AND TELECOMMUNICATION ENGINEERS**

Ph : 04294 - 225585, 223711

Fax No : 04294 - 224787

e-mail : [info@nandhaengg.org](mailto:info@nandhaengg.org)

Website : <http://nandhaengg.org>

**Thiru V. SHANMUGAN**

*Chairman*

*Sri Nandha Educational Trust*

**Thiru S. NANDHAKUMAR PRADEEP**

*Secretary*

*Sri Nandha Educational Trust*

**Thiru S. THIRUMOORTHY**

*Secretary*

*Nandha Educational Institutions*

**Dr.S.ARUMUGAM**

*CEO*

*Nandha Educational Institutions*

## **PATRON**

Dr. N.RENGARAJAN

*PRINCIPAL*

Dr.I.SENTHIL

*DIRECTOR*

## **CONVENORS**

Dr.C.N.MARIMUTHU

*DEAN/R&D*

Dr.S.Kavitha

*HOD/ ECE*

## **CO-ORDINATOR**

Mr.C.PRABHU, AP/ECE



## **INVITATION**

### **CVAC**

The Management, Principal and the  
Department of Electronics and Communication Engineering  
Cordially invite you for the

**Value added Course**

on

**"INDUSTRIAL AUTOMATION USING PLC/SCADA"**

by

**Mr.S.RAVI,**

**PCB DESIGNER,**

**INNOVA SKILL TECHNOLOGY,**

**BANGALORE**



Date: 23.3.2023 - 26.3.2023

Time: 09.30 AM to 04.00 PM

Venue: DIGITAL LAB AND MP LAB, Block 2, NEC



NANDHA ENGINEERING COLLEGE(AUTONOMOUS), ERODE -52

DEPARTMENT OF ECE

ACADEMIC YEAR: 2022 - 2023 (EVEN SEM)

17ECI08- INDUSTRIAL AUTOMATION USING  
PLC/SCADA

S.NO.	REG.NO	STUDENT NAME
1	20EC004	ANANDH ALEXANDER S
2	20EC010	CHANDRU V
3	20EC035	LOGANATHAN S
4	20EC036	LOGANATHAN V
5	20EC039	MANOJ A
6	20EC043	MOHAMMED ABUTHAHIR BASITH A
7	20EC051	POORNIMA M
8	20EC060	RIYAZ KHAN M
9	20EC062	SAMUVEL R
10	20EC064	SANJAY E
11	20EC072	SHAIK THAYYABA
12	20EC074	SHARNIGAA S
13	20EC075	SIVASHANKAR R
14	20EC080	SUBA R
15	20EC081	SUBASREE P
16	20EC092	VISHNU C
17	20ECT01	JANANI N
18	20ECL01	AKILESHWARAN K
19	20ECL02	ARJUNSHAJI T
20	20ECL03	ASWIN KUMAR G
21	20ECL04	BINDHYA P
22	20ECL05	DEVADHARSHINI M

23	20ECL06	DINESH P
24	20ECL07	HARIKRISHNA C H
25	20ECL09	KARTHIKEYAN S
26	20ECL10	KOWSALYA D
27	20ECL11	KRISHNA KUMAR S
28	20ECL14	MOULIDHARAN G
29	20ECL15	MYDEEPAN V
30	20ECL16	NAVEEN M
31	20ECL17	NIKIL A
32	20ECL18	PANATH AMBROSE ABISHEK A
33	20ECL19	POORNAVIJAY N
34	20ECL21	RAMYA M
35	20ECL22	SANTHOSH M
36	20ECL24	SHANMUGA SUNDARAM S
37	20ECL26	SIVANANDHAM N V
38	20ECL29	SURESH KUMAR M
39	20ECL31	VARUN V
40	20ECL33	VISHNU G M
41	20ECL34	VISHNUVARTHAN J

42 20EC071 SETHUPATHI S

C. Prasad  
16/3/23

S. Krithika  
HOD/ECE 16.3.23



NANDHA ENGINEERING COLLEGE, ERODE-52(AUTONOMOUS)  
DEPARTMENT OF ECE

YEAR/SEMESTER : III YEAR/VI SEMESTER(2022-2023) EVEN  
ELECTIVE TYPE : CVAC  
ELECTIVE COURSE CODE:17EC109  
ELECTIVE COURSE NAME: INDUSTRIAL AUTOMATION USING PLC/SCADA  
ASSESS BY:

S.NO	REG.NO	STUDENT NAME	23.3.2023	24.3.2023	25.3.2023	26.3.2023
1	20EC004	ANANDH ALEXANDER S	Anand	Anand	Anand	Anand
2	20EC010	CHANDRU V	V.Chandru	Chandru	V.Chandru	Chandru
3	20EC035	LOGANATHAN S	S.Loganathan	S.Loganathan	S.Loganathan	S.Loganathan
4	20EC036	LOGANATHAN V	V.Loganathan	V.Loganathan	V.Loganathan	V.Loganathan
5	20EC039	MANOJ A	A.Manoj	A.Manoj	A.Manoj	A.Manoj
6	20EC043	MOHAMMED ABUTHAHIR BASITH A	A.Amudhan	A.Amudhan	A.Amudhan	A.Amudhan
7	20EC051	POORNIMA M	M.Poornima	M.Poornima	M.Poornima	M.Poornima
8	20EC060	RIYAZ KHAN M	M.Riyaz	M.Riyaz	M.Riyaz	M.Riyaz
9	20EC062	SAMUVEL R	R.Samuel	R.Samuel	R.Samuel	R.Samuel
10	20EC064	SANJAY E	E.Sanjay	E.Sanjay	E.Sanjay	E.Sanjay
11	20EC071	SETHUPATHI S	S.Sethupathi	S.Sethupathi	S.Sethupathi	S.Sethupathi
12	20EC072	SHAIK THAIYYABA	B.Shaik	B.Shaik	B.Shaik	B.Shaik
13	20EC074	SHARNIGAA S	S.Sharniga	S.Sharniga	S.Sharniga	S.Sharniga
14	20EC075	SIVASHANKAR R	R.Sivashankar	R.Sivashankar	R.Sivashankar	R.Sivashankar
15	20EC080	SUBA R	R.Suba	R.Suba	R.Suba	R.Suba
16	20EC081	SUBASREE P	P.Subasree	P.Subasree	P.Subasree	P.Subasree
17	20EC092	VISHNU C	C.Vishnu	C.Vishnu	C.Vishnu	C.Vishnu
18	20ECT01	JANANI N	N.Janani	N.Janani	N.Janani	N.Janani
19	20ECL01	AKILESHWARAN K	K.Akilesh	K.Akilesh	K.Akilesh	K.Akilesh
20	20ECL02	ARJUNSHAJI T	T.Arjunshaji	T.Arjunshaji	T.Arjunshaji	T.Arjunshaji
21	20ECL03	ASWIN KUMAR G	G.Aswin	G.Aswin	G.Aswin	G.Aswin
22	20ECL04	BINDHYA P	P.Bindhya	P.Bindhya	P.Bindhya	P.Bindhya
23	20ECL05	DEVADHARSHINI M	M.Devadharshini	M.Devadharshini	M.Devadharshini	M.Devadharshini
24	20ECL06	DINESH P	P.Dinesh	P.Dinesh	P.Dinesh	P.Dinesh
25	20ECL07	HARIKRISHNA C H	H.Harish	H.Harish	H.Harish	H.Harish

26	20ECL09	KARTHIKEYAN S	S. Karthi	S. Karthi	S. Karthi	S. Karthi
27	20ECL10	KOWSALYA D	D. Kosa	D. Kosa	D. Kosa	D. Kosa
28	20ECL11	KRISHNA KUMAR S	S. Krishna Kumar	S. Krishna Kumar	S. Krishna Kumar	S. Krishna Kumar
29	20ECL14	MOULIDHARAN G	G. Moulidharan	G. Moulidharan	G. Moulidharan	G. Moulidharan
30	20ECL15	MYDEEPAN V	V. M. Deepan	V. M. Deepan	V. M. Deepan	V. M. Deepan
31	20ECL16	NAVEEN M	M. Naveen	M. Naveen	M. Naveen	M. Naveen
32	20ECL17	NIKIL A	A. Nikil	A. Nikil	A. Nikil	A. Nikil
33	20ECL18	PANATH AMBROSE ABISHEK A	A. Abhishek	A. Abhishek	A. Abhishek	A. Abhishek
34	20ECL19	POORNAVIJAY N	N. Purnavijay	N. Purnavijay	N. Purnavijay	N. Purnavijay
35	20ECL21	RAMYA M	M. Ramya	M. Ramya	M. Ramya	M. Ramya
36	20ECL22	SANTHOSH M	M. Santhosh	M. Santhosh	M. Santhosh	M. Santhosh
37	20ECL24	SHANMUGA SUNDARAM S	S. Shanmuga Sundaram	S. Shanmuga Sundaram	S. Shanmuga Sundaram	S. Shanmuga Sundaram
38	20ECL26	SIVANANDHAM N V	N. V. Sivanandham	N. V. Sivanandham	N. V. Sivanandham	N. V. Sivanandham
39	20ECL29	SURESH KUMAR M	M. Suresh Kumar	M. Suresh Kumar	M. Suresh Kumar	M. Suresh Kumar
40	20ECL31	VARUN V	V. Varun	V. Varun	V. Varun	V. Varun
41	20ECL33	VISHNU G M	G. M. Vishnu	G. M. Vishnu	G. M. Vishnu	G. M. Vishnu
42	20ECL34	VISHNUVARTHAN J	J. Vishnuvarthan	J. Vishnuvarthan	J. Vishnuvarthan	J. Vishnuvarthan

C. Pinal  
26/3/23  
Faculty  
INCHARGE

S. K. K. K.  
27/3/23  
HOD/ECE

F. S. S.  
26/03/2023



45

REG. NO :

NAME :

**NANDHA ENGINEERING COLLEGE, ERODE - 52**

(An Autonomous Institution, Affiliated to Anna University, Chennai)

Academic year (2022 - 2023) Even Sem

**DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING**

**17ECI08- INDUSTRIAL AUTOMATION USING PLC/SCADA**

- 1 What is jogging in PLC ?
  - A. Moving the motor in small increment
  - B. Giving the motor full power
  - C. Filling operation
  - D. Giving motor a starting torque
- 2 Water treatment, Bottle filling process, Electric power management comes under ?
  - A. Building Automation
  - B. Public Transport
  - C. Process Automation
  - D. Scientific Research
- 3 At Which year Automation was widely used?
  - A. 1927
  - B. 1937
  - C. 1947
  - D. 1957
- 4 In RS232 female connector which pin will be receiving a data (RXD) ?
  - A. 3rd pin
  - B. 1st pin
  - C. 8th pin
  - D. 2nd pin
- 5 What is the use of Latching ?
  - A. To ON the power supply
  - B. To OFF the power supply
  - C. For Continuous power supply
  - D. For Temporary power supply
- 6 When PLC is in STOP mode what it is actually doing ?
  - A. Scanning the Inputs
  - B. Executing the Programs
  - C. Updating the Outputs
  - D. All of the above
- 7 At which year Microprocessor based PLC was invented?
  - A. 1967
  - B. 1968
  - C. 1969
  - D. 1977
- 8 As per I/O expansion ,what type of PLC is omron CP1E ?
  - A. Fixed type
  - B. Modular type
  - C. Rack type -rail config
  - D. Rack type

- 9 What is the name of 1st PLC?  
A. MICRO CONTROLLER 068  
B. DIGCON 077  
C. MODICON 084  
D. PROGRAMMABLE CONTROLLER 128
- 10 What is Automation in short ?  
A. Man machine device  
B. Program + Implementation  
C. Human control sequences + technical equipment(controller)  
D. Controller + input elements
- 11 Which is the most preferable interlocking in industry?  
A. Electrical Interlocking  
B. Mechanical Interlocking  
C. Multi Interlocking  
D. Option 1 & 2
- 12 Why PLC is called as Solid State Device ?  
A. Because It's robust that's why called so  
B. It doesn't have any moving parts  
C. Due to maximum I/O Expansion capability  
D. 1 & 3
- 13 At Which year Lights out concept was established ?  
A. 1950  
B. 1960  
C. 1970  
D. 1980
- 14 Which sensor is used in metal detectors ?  
A. Proximity capacitive sensor  
B. Proximity inductive sensor  
C. RTD  
D. Planar hall sensor
- 15 Which one is not a input device in below control components ?  
A. Contactor  
B. Toggle switch  
C. Proximity sensor  
D. Floating switch
- 16 Maximum how many Memory Coils can be used?  
A. 550  
B. 780  
C. 950  
D. 1080
- 17 Which communication system is used for virtual simulation?  
A. USB  
B. CONTROLLER LINK  
C. TOOLBUS  
D. SYSMAC LINK
- 18 Which Field devices can be used for high voltages (3 phase supply) ?

- A. Contactor
  - B. SPDT Relay
  - C. DPDT relay
  - D. DPST Relay
- 19 In SPDT Relay what does SPDT stands for ?
- A. Single Power Double Terminal
  - B. Single Pole Double Terminal
  - C. Single Pole Double Throw
  - D. Single Point Double Throw
- 20 Which Timer is not present in OMRON PLC?
- A. On-Delay Timer
  - B. Off-Delay Timer
  - C. Retentive Timer
  - D. Accumulative Timer
- 21 What is the purpose of using Zero Speed Switch?
- A. To sense the speed of the motor
  - B. To control the motor speed
  - C. To actuate the motor when its come to zero speed
  - D. To detect the stoppage of the rotating shaft
- 22 What is the Node address for virtual simulation?
- A. 100
  - B. 30
  - C. 20
  - D. 10
- 23 Thermocouple , RTD ,other sensors are ?
- A. Input field devices
  - B. Output field devices
  - C. Analog input devices
  - D. Both input & output devices
- 24 RS232 contains how many pins ?
- A. 7 pins
  - B. 9 pins
  - C. 10 pins
  - D. 8 pins
- 25 Solenoid valves comes under ?
- A. Digital Input Devices
  - B. Output Devices
  - C. Input Devices
  - D. Both Input & Output Devices
- 26 How to switch to program mode?
- A. Ctrl+P
  - B. Ctrl+D
  - C. Ctrl+I
  - D. Ctr+2
- 27 How to Compile the Program?
- A. Ctrl+F5

- B. Ctrl+F6
  - C. Ctrl+F7
  - D. Ctrl+F8
- 28 How to Add or Delete the lines?
- A. Alt+Arrow keys
  - B. Shift+Arrow keys
  - C. Ctrl+Shift+Arrow keys
  - D. Ctrl+Arrow keys
- 29 Executing 'R' in the LD programming window allows us to ?
- A. To Edit Rung Comment
  - B. To Enable Read only mode
  - C. To Insert Below Rung
  - D. To Insert Above Rung
- 30 What is the shortcut for Normally Open Contact?
- A. Ctrl+N
  - B. Cntrl+O
  - C. C
  - D. O
- 31 What is the shortcut for work Online?
- A. Ctrl+Shift+w
  - B. Ctrl+shift+S
  - C. Ctrl+W
  - D. Alt+Ctrl+W
- 32 What is the shortcut for Normally Close output coil
- A. Ctrl+E
  - B. O
  - C. W
  - D. Q
- 33 What is the shortcut to enable simulation?
- A. Ctrl+Shift+w
  - B. Ctrl+shift+S
  - C. Ctrl+W
  - D. Alt+Ctrl+W
- 34 What happens if executed 'Shift+F2'?
- A. Back to Program mode
  - B. Back to Edit mode
  - C. Back to Online Edit mode
  - D. Back to Read only mode
- 35 How to Edit the contact name or address in Ready only mode?
- A. Shift+F1
  - B. F2
  - C. Shift+F3
  - D. Ctrl+Shift+F4
- 36 Find out the PLC software for 'omron' from below PLC Softwares?
- A. Modicon TSX Micro
  - B. Power Logic



- C. Modsoft
  - D. Syswin
- 37 How many Timers & Counters can be used in Omron PLC ?
- A. T=255, C=256
  - B. T=256, C=255
  - C. T=255, C=255
  - D. T=256, C=256
- 38 What is the starting address for memory ?
- A. 100
  - B. 0
  - C. 10
  - D. 1
- 39 What is the BCD value of timer for 1hour ?
- A. 36000
  - B. 64000
  - C. 3600
  - D. 12000
- 40 What is the command for Retentive Timer?
- A. TIM
  - B. TTIM
  - C. TIMR
  - D. TMHH
- 41 What is the syntax for timer with maximum BCD value?
- A. TIMX 000 #65535
  - B. TIM 000 #65535
  - C. TIMX #000 #65535
  - D. TTIM 000 #65535
- 42 What is the Syntax for Up-Down Counter ?
- A. CNTUD 000 #counter value
  - B. CNT 000 #countervalue
  - C. CTR 000 #counter value
  - D. CNTR 000 #Counter value
- 43 What is the set value for 5 counts in Up-Down counter?
- A. 3
  - B. 4
  - C. 5
  - D. 6
- 44 What is the Command for Interlocking?
- A. IL
  - B. ITL
  - C. IIL
  - D. INL
- 45 Which jump is preferred to skip the process when the condition is True?
- A. JMP
  - B. CJP
  - C. CJMP

D. JME

- 46 Subroutine can be used for which among the following process ?
- A. Traffic signal system
  - B. Bottle filling system
  - C. Opening & closing of doors
  - D. Automatic parking system
- 47 Maximum how many subroutine can be used in omron PLC?
- A. 126
  - B. 127
  - C. 128
  - D. 129
- 48 What is Virtual Simulation ?
- A. Transferring program from PC to PLC
  - B. PLC & SCADA interfacing
  - C. Creating a virtual SCADA to interface the PLC
  - D. Creating a Virtual PLC within the s/w to work online
- 49 What is the maximum scan time of the PLC, if the program is very large?
- A. Upto 50 milliseconds
  - B. Upto 100 milliseconds
  - C. Upto 1 second
  - D. Up to 1 minute
- 50 What is the application of 'PIR' sensor?
- A. Conveyor process
  - B. Filling process
  - C. Automatic Door open and Close
  - D. Lift control



NANDHA ENGINEERING COLLEGE (AUTONOMOUS), ERODE -52  
OFFICE OF CONTROLLER OF EXAMINATIONS  
ELECTIVE SUBJECT STUDENT LIST (UG) - VI Semester  
Degree: BE/B.Tech/M.E/MCA/MBA

DATE : 26/3/2023

Branch		ELECTRONICS AND COMMUNICATION ENGINEERING		
Elective Subject Type		CVAC		
Elective Subject Code		17EC109		
Elective Subject Title		INDUSTRIAL AUTOMATION USING PLC/SCADA		
S.No	Reg. No	Student Name	MARKS (50)	MARKS IN WORDS
1	20EC004	ANANDH ALEXANDER S	36	THREE SIX
2	20EC010	CHANDRU V	26	TWO SIX
3	20EC035	LOGANATHAN S	38	THREE EIGHT
4	20EC036	LOGANATHAN V	39	THREE NINE
5	20EC039	MANOJ A	39	THREE NINE
6	20EC043	MOHAMMED ABUTHAHIR BASITH A	30	THREE ZERO
7	20EC051	POORNIMA M	42	FOUR TWO
8	20EC060	RIYAZ KHAN M	38	THREE EIGHT
9	20EC062	SAMUVEL R	35	THREE FIVE
10	20EC064	SANJAY E	41	FOUR ONE
11	20EC071	SETHUPATHI S	37	THREE SEVEN
12	20EC072	SHAIK THAYYABA	40	FOUR ZERO
13	20EC074	SHARNIGAA S	41	FOUR ONE
14	20EC075	SIVASHANKAR R	33	THREE THREE
15	20EC080	SUBA R	41	FOUR ONE
16	20EC081	SUBASREE P	41	FOUR ONE
17	20EC092	VISHNU C	40	FOUR ZERO
18	20ECT01	JANANI N	41	FOUR ONE
19	20ECL01	AKILESHWARAN K	40	FOUR ZERO
20	20ECL02	ARJUNSHAJI T	39	THREE NINE
21	20ECL03	ASWIN KUMAR G	38	THREE EIGHT
22	20ECL04	BINDHYA P	32	THREE TWO
23	20ECL05	DEVADHARSHINI M	38	THREE EIGHT
24	20ECL06	DINESH P	26	TWO SIX
25	20ECL07	HARIKRISHNA C H	40	FOUR ZERO

26	20ECL09	KARTHIKEYAN S	28	TWO EIGHT
27	20ECL10	KOWSALYA D	42	FOUR TWO
28	20ECL11	KRISHNA KUMAR S	41	FOUR ONE
29	20ECL14	MOULIDHARAN G	37	THREE SEVEN
30	20ECL15	MYDEEPAN V	40	FOUR ZERO
31	20ECL16	NAVEEN M	38	THREE EIGHT
32	20ECL17	NIKIL A	41	FOUR ONE
33	20ECL18	PANATH AMBROSE ABISHEK A	39	THREE NINE
34	20ECL19	POORNAVIJAY N	40	FOUR ZERO
35	20ECL21	RAMYA M	42	FOUR TWO
36	20ECL22	SANTHOSH M	41	FOUR ONE
37	20ECL24	SHANMUGA SUNDARAM S	36	THREE SIX
38	20ECL26	SIVANANDHAM N V	38	THREE EIGHT
39	20ECL29	SURESH KUMAR M	30	THREE ZERO
40	20ECL31	VARUN V	39	THREE NINE
41	20ECL33	VISHNU G M	37	THREE SEVEN
42	20ECL34	VISHNUVARTHAN J	40	FOUR ZERO

INDUSTRY CO-ORDINATOR

*A. Subash*

COMPANY SEAL





# NANDHA ENGINEERING COLLEGE (Autonomous)

Affiliated to Anna University, Chennai. Approved by AICTE, NBA  
Perundurai, Erode - 638 052

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

in association with

INNOVA SKILL TECHNOLOGY

## CERTIFICATE FOR CVAC

This is to certify that CHANDRU. V, III- YEAR of  
ELECTRONICS AND COMMUNICATION ENGINEERING has attended Value  
Added Course in "Embedded System Design using PIC Microcontroller" from 23.03.2023 to 26.03.2023.

*C. Permal*

CO-ORDINATOR

*S. K. K. K.*

HOD / ECE

*J. S. J. S.*

RESOURCE PERSON



# NANDHA ENGINEERING COLLEGE (Autonomous)

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

IN ASSOCIATION WITH

INNOVASKILL TECHNOLOGY

## CERTIFICATE FOR CVAC

This is to certify that RAMYA.M, III - YEAR of  
ELECTRONICS AND COMMUNICATIONAL ENGINEERING has attended Value  
Added Course in "Embedded System Design using PIC Microcontroller" from 23.03.2023 to 26.03.2023.

CO-ORDINATOR

HOD / LCE

RESOURCE PERSON

# RAVI S

2/58A Chinnakurumbatheru,

Kotha kottai(Post),

Vaniyambadi(T.K),

Vellore.

PIN:635752

Mobile no : +91- 9095065071, 9994577412

E-mail ID : [sssravi93@gmail.com](mailto:sssravi93@gmail.com)

## Objective

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To work for a growing company that will provide me with possibility of growing within it and will allow the development of my abilities and skills in favor of company's mission and my environment.

## Education

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- **B.E-Electrical and Electronics Engineering**, Vidyaa Vikas College Of Engineering and Technology, Affiliated to ANNA UNIVERSITY, Chennai, May 2014  
With **CGPA** of **8.02**(Out of 10).
- **Higher Secondary School Education(HSC)**, Government Higher Secondary School(Nimmiyambattu,Vlr Dt,TN), May 2010  
With **Percentage** of **67%**.
- **Secondary School Education(SSLIC)**, Government High School(Nimmiyambattu,Vlr Dt,TN), May 2008  
With **Percentage** of **78.2%**.

## Areas of Interest

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- Electrical Machines
- Power Systems
- Electric Drives and Control
- Industrial automation(PLC/SCADA)
- Embedded system

## Software Skills

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- Embedded (Keil uVision5, Keil uVision4, MP LAB IDE, Atmel Studio, Proteus)
- PCB board designing (ORCAD-Capture, PSPICE., PCB editor)
- Industrial Automation: PLC/SCADA, HMI and VFD

## Embedded system domain skills

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- ATMEL (Assembly language & C language)
- PIC controller (PIC16F877A & PIC18F4550)
- ARM LPC2148
- AVR Atmega16

## PCB domain skills

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- Have experienced in Developing PCB Schematic using "OrCad" Capture.
- Have experienced in Electronic analysis and simulation using "OrCad PSPICE".
- Have experienced in Developing PCB Layout using "OrCad PCB Editor".

## Industrial automation domain skills

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- Have experienced in Developing PLC program (Ladder Logic and Functional Block Diagram) in Siemens & Omron brand.
- Have experienced in Monitoring and control process in industry using SCADA and HMI for both Siemens & Omron brand.
- Have experienced in VFD commissioning for different control action for industry motor.

## Academic Achievement

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- The Project entitled is "**CLOSED LOOP CONTROL OF ADJUSTABLE SPEED DRIVE USING HIGH PERFORMANCE PIC CONTROLLER**". The main objective of this is to



maintain the speed of induction motor. Nowadays all industrial sides running depend upon electric drives. This drives are mainly affected while voltage fluctuation. In our project to reduce the voltage fluctuation and maintain the speed of motors.

### Working Experience

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- I have one year working experience on **NVH India Auto Parts Private Limited, Irunkattukottai, Chennai** in the year of (Sep -2014 to October-2015 -):Hyundai group-NVH India Auto Parts Private Limited is a private company incorporated on 23 march 2006.It's classified as Indian non-government company and is registered at register companies,Chennai.
- Having 5 Year of working experience in Industrial automation (PLC/SCADA), EMBEDDED SYSTEM Coding Developer and Trainer and PCB Designer at Innovaskill Technologies Private Limited.

### Personal details

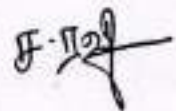
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Date of Birth : 15.03.1993  
Gender : Male  
Father's Name : Shanmugam K  
Mother's Name : Pappathi S  
Nationality : Indian  
Languages Known : English, Tamil

### Declaration

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*I hereby declared that the details furnished above are true to the best of my knowledge and belief.*



(S.RAVI)

Date:

## STUDENT FEEDBACK ON INDUSTRIAL AUTOMATION USING PLC/SCADA

### Feedback on Industrial Automation using PLC/SCADA

- \* I had a better understanding about Industrial Automation using PLC/SCADA
- \* SCADA provides a user-friendly and comprehensive view of the industrial processes
- \* They provide many information for students understand their learning and next steps

### FEED BACK ON INDUSTRIAL AUTOMATION USING PLC/SCADA

- \* It would be beneficial to ensure that the system includes robust security measures.
- \* I had a better experience in making circuit designs.
- \* Considering future stability and flexibility in system architecture would be advantageous for potential modifications.
- \* This provides user-friendly and comprehensive view of the industrial processes and control.
- \* Now, I had a basic knowledge about what is industrial automation using PLC,



## NANDHA ENGINEERING COLLEGE (AUTONOMOUS),

Erode - 638 052.

### FEEDBACK ON INDUSTRIAL AUTOMATION USING PLC/SCADA

It is my pleasure to participate as a Resource person for value added course on Industrial Automation Using PLC/SCADA. I appreciate the efforts by staff members in organizing this programme. My sincere gratitude for wonderful hospitality. I am very much satisfied with the co-operation and sincerity of the students. Best wishes.

*J. J. A.* 20/3/23

RESOURCE PERSON



# NANDHA ENGINEERING COLLEGE (AUTONOMOUS),

Erode - 638 052.

Department of **ELECTRONICS & COMMUNICATION ENGINEERING**

## CVAC ON INDUSTRIAL AUTOMATION USING PLC/SCADA

CVAC on Industrial Automation Using PLC/SCADA was conducted from 23.3.2023 to 26.3.2023 by Innova Skill Technology. During the first day, introductory topics of Automation was covered and they gave clear explanation on PLC/SCADA. In the second day, PLC programming and applications were discussed. Last two days, the practical session of PLC was conducted. At the end of the day, a test was conducted to check the understanding ability of the students. The main outcome of this course is to motivate the students to carry out final year projects based on automation using PLC/SCADA for various applications.

