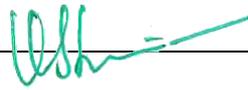


**2.3.1 Student centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences**

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**PRINCIPAL**  
**MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING**  
**34, Rajiv Gandhi Road (OMR), Siruseri, IT Park**  
**Chennai-603 103.**



**DEPARTMENT OF TRAINING AND PLACEMENT**  
**CONSOLIDATED INDUSTRIAL VISIT AY-2022-23**

Sl.No	Dept	DATE	INDUSTRY	YEARS	No of Students
1.	CIVIL ENGG	20.09.2022	AMAZE CONCRETE PRODUCTS PVT LTD Kundrathur Chennai	II year III year and IV year	30
		16.09.2022	Water Treatment Plant, Chembarambakkam	II year III year and IV year	30
		03.05.2023	National Institute of Wind Energy Thoraippakkam, Chennai	III Years	5
2.	CSE	27.08.2022	Lenovo India Ltd. - Pondicherry	III year	38
		23.02.2023	JVS Electronics Private Limited Bangalore	III Years	7
		24.02.2023	Indian Institute of Science Bangalore	III Years	7
3.	EEE	29.11.2022	Ti Anode Fabricators Private Limited at Madambakkam Chennai	IV year	6
		23.02.2023	JVS Electronics Private Limited Bangalore	III Years	2
		24.02.2023	Indian Institute of Science Bangalore	III Years	2
		03.05.2023	National Institute of Wind Energy Thoraippakkam, Chennai	III Years	16
		12.04.2023	Mettur Power station	II years	8
4.	ECE	23.02.2023	JVS Electronics Private Limited Bangalore	III Years	9
		12.04.2023	Mettur Power station	II years	
5.	MECH	21.10.2022	Napkin Pengal Poocharam at Gerugambakkam Chennai	II year	11
		28.11.2022	Commtrade Metals, Gumudipoondi	III year and IV year	69
		29.11.2022	Ti Anode Fabricators Private Limited at Madambakkam Chennai	II year	24
		23.02.2023	JVS Electronics Private Limited Bangalore	III Years	2
		24.02.2023	Indian Institute of Science Bangalore	III Years	2
		03.05.2023	National Institute of Wind Energy Thoraippakkam, Chennai	II Years	24
		12.04.2023	Mettur Power station	II years & III years	13

*Handwritten signature*  
**PRINCIPAL**  
Mohamed Sathak A.J. College of Engineering  
No 34, Rajiv Gandhi Salai (OMR), Siruseri IT Park,  
Chennai - 603103.



**MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING**

(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai)



From

06/02/2023

Department of Training and Placement,  
MSAJCE,  
Chennai 603103.

To

The Principal,  
MSAJCE,  
Chennai 603 103.

*Permitted*  
*A. V. J.*  
*06/02/2023*

Respected Sir,

Sub: Request for Industrial Visit Permission and Transportation - Reg.

For an industrial visit to IITM - Research Park, Chennai on 10th February, 2023, Third-year ECE, Second year Mechanical and Civil students have been scheduled. In this regard, we kindly ask you to permission and transportation for the students.

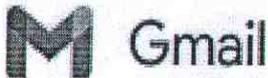
Total No. of Students – 60

Yours sincerely,

*A. V. J.*  
*06/02/2023*  
Placement Officer

*[Handwritten signature]*

**PRINCIPAL**  
Mohamed Sathak A.J. College of Engineering  
No 34, Rajiv Gandhi Salai (OMR)  
Sipool - IT Highway Egattur,  
Chennai - 603103.



Placement Cell &lt;placement@msajce-edu.in&gt;

---

**Request for Campus Tour - Reg**

7 messages

---

**Placement Officer** <placement@msajce-edu.in>  
To: office@incubation.iitm.ac.in

Mon, Jan 9, 2023 at 11:31 AM

Respected Sir/Madam,

Greetings from Mohamed Sathak A J College of Engineering, Chennai.

Our utmost privilege is to get in touch with you through this mail. We kindly request you to let us know if there are any possibilities for providing campus visits for a few of our students of Mechanical, EEE, ECE CSE, IT, CIVIL, AIDS, and CSBS branches, during the first week of February 2023 at your esteemed research park.

As a part of the degree, in order to graduate, it is compulsory for a student to undergo an Industrial visit. This experience for the student is invaluable, regarded by many as a highlight of their undergraduate study and a terrific opportunity for their professional development.

We'd like to ask you to accept our request and do what's needed.

With Thanks & Regards,  
Vigneshwaran V  
Placement Officer,  
Department of Training and Placement,  
Mohamed Sathak AJ College of Engineering,  
7904117425  
MSAJCE WEBLINK

---

**Pragadhis** <pragadhis@incubation.iitm.ac.in>  
To: "placement@msajce-edu.in" <placement@msajce-edu.in>  
Cc: Ramya <ramya@incubation.iitm.ac.in>, Sowmiya <sowmiya\_buildclub@incubation.iitm.ac.in>, Aakash Srinivasan <s.aakash@incubation.iitm.ac.in>, Shalini Srivatsava <shalini@incubation.iitm.ac.in>

Tue, Jan 10, 2023 at 11:37 AM

Dear Mr Vigneshwaran,

As discussed, we can schedule this on 10 Feb '23 from 11:00 AM. You can liaise with my colleague, Shalini at 8802176220 further details.

Regards,

**Pragadhis C**

10X Strategy Officer

---

IIT-M Incubation CellD Block, 3<sup>rd</sup> Floor, IIT Madras Research Park,

Kanagam Road, Taramani, TN, Chennai – 600113

Mobile: +91 98845 13451



**PRINCIPAL**  
Mohamed Sathak A.J. College of Engineering  
No. 31, Rajiv Gandhi Salai (OMR)  
Sipcot - IT Highway Egattur,  
Chennai - 600103.

3/28/23, 5:42 PM

Mohamed Sathak A.J. College Of Engineering Mail - Request for Campus Tour - Reg

www.incubation.iitm.ac.in

It costs 0\$ to smile, so :)

[Quoted text hidden]

Placement Officer <placement@msajce-edu.in>  
To: Pragadhish <pragadhish@incubation.iitm.ac.in>

Tue, Jan 10, 2023 at 3:02 PM

Dear Sir,  
Thankyou for the confirmation and I will fix to the given date

With Thanks & Regards,  
Vigneshwaran V  
Placement Officer,  
Department of Training and Placement,  
Mohamed Sathak AJ College of Engineering,  
7904117425  
MSAJCE WEBLINK

[Quoted text hidden]

Shalini Srivatsava <shalini@incubation.iitm.ac.in>

Mon, Feb 6, 2023 at 11:57 AM

To: "placement@msajce-edu.in" <placement@msajce-edu.in>

Cc: Pragadhish <pragadhish@incubation.iitm.ac.in>, Sowmiya <sowmiya\_buildclub@incubation.iitm.ac.in>, Aakash Srinivasan <s.aakash@incubation.iitm.ac.in>

Dear Mr. Vigneshwaran,

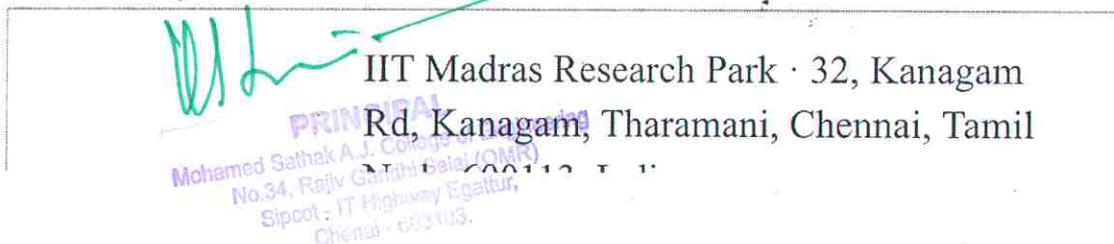
As discussed, your request for **60 students** to visit IITM Research Park is scheduled on **February 10 (Friday)** Hope the proposed schedule is fine. Kindly acknowledge.

**On the day of the visit, arrive at the location by 10:30 AM.**

Please note that this is not the IIT-Madras campus but is located outside the IIT-Madras campus.

For your convenience, I'm sharing the location in google Maps here. If you are coming by bus, kindly choose the route via MGR Film City Road and adjacent to Ramanujam SEZ.

<https://goo.gl/maps/TR62Vg5jHU9VQNeQ8>



For further queries, you can reach me at 8802176220

Regards,  
Shalini  
Associate Communication  
IITM Incubation Cell

---

**From:** Pragadhis <pragadhis@incubation.iitm.ac.in>  
**Sent:** Tuesday, January 10, 2023 11:37 AM  
**To:** placement@msajce-edu.in <placement@msajce-edu.in>  
**Cc:** Ramya <ramya@incubation.iitm.ac.in>; Sowmiya <sowmiya\_buildclub@incubation.iitm.ac.in>; Aakash Srinivasan <s.aakash@incubation.iitm.ac.in>; Shalini Srivatsava <shalini@incubation.iitm.ac.in>  
**Subject:** Re: Request for Campus Tour - Reg

[Quoted text hidden]

---

**Placement Officer** <placement@msajce-edu.in>  
To: Shalini Srivatsava <shalini@incubation.iitm.ac.in>

Mon, Feb 6, 2023 at 12:07 PM

Dear Madam,  
Thankyou very much We will adhere to the above-mentioned rules and I will send you the transport details as soon as possible

**With Thanks & Regards,**  
**Vigneshwaran V**  
**Placement Officer,**  
**Department of Training and Placement,**  
**Mohamed Sathak AJ College of Engineering,**  
**7904117425**  
**MSAJCE WEBLINK**

[Quoted text hidden]

---

**Placement Officer** <placement@msajce-edu.in>  
To: Shalini Srivatsava <shalini@incubation.iitm.ac.in>

Thu, Feb 9, 2023 at 3:26 PM

Respected Madam,  
Kindly find the transport details for which our students will be coming for tomorrow's Visit  
Vehicle number : TN14 A 5680

**With Thanks & Regards,**  
**Vigneshwaran V**  
**Placement Officer,**  
**Department of Training and Placement,**  
**Mohamed Sathak AJ College of Engineering,**  
**7904117425**  
**MSAJCE WEBLINK**

On Mon, Feb 6, 2023 at 11:57 AM Shalini Srivatsava <shalini@incubation.iitm.ac.in> wrote:

[Quoted text hidden]

---

**Shalini Srivatsava** <shalini@incubation.iitm.ac.in>  
To: Placement Officer <placement@msajce-edu.in>

Thu, Feb 9, 2023 at 4:05 PM

Thank you.

Get Outlook for Android

**IITM Incubation Cell**

IIT Madras Research Park, 3rd Floor, D Block,

Phase II, Kanagam Road, Taramani, Chennai - 600113, Tamil Nadu

  
**PRINCIPAL**  
Mohamed Sathak A.J. College of Engineering  
No.34, Rajiv Gandhi Road (QMR)  
Sipcot - IT Highway Egattur,  
Chennai - 603103.

M: 8802176220

[www.incubation.iitm.ac.in](http://www.incubation.iitm.ac.in) | [facebook](#) | [@IITMIC](#) | [LinkedIn](#)

270+ deep-tech Startup portfolio: [here](#)

[View the latest Newsletter here](#)

---

**From:** Placement Officer <placement@msajce-edu.in>

**Sent:** Thursday, February 9, 2023 3:26:21 PM

**To:** Shalini Srivatsava <shalini@incubation.iitm.ac.in>

[Quoted text hidden]

[Quoted text hidden]



**PRINCIPAL**  
Mohamed Sathak A.J. College of Engineering  
No.34, Rajiv Gandhi Salai (OMR)  
Sipcot - IT Highway Egattur,  
Chennai - 600103.



# MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING

(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai)



## Department of Training and Placement Industrial Visit : IIT Madras Research Park – Students Name List

II YEAR EEE NAME LIST			
S.NO	REG NO	NAME OF THE STUDENT	YEAR
1	311821105001	ABDUL MALIK J (H)	II
2	311821105002	DILLIGANESH A	II
3	311821105004	KARTHICK A	II
4	311821105005	MOHAMED BASIL S (H)	II
5	311821105006	MOHAMED IZZAT. A	II
6	311821105008	MOHANRAJ.K (H)	II
7	311821105010	NAGARAJ. B	II
8	311821105011	SHARAIR SARFAN S.A (H)	II
9	311821105012	SRIKARTHIK.V	II
10	311821105013	SYED HIFSUL RAHMAN F	II
11	311821105014	THAMEEM ANSAARI I.S (H)	II
12	311821105015	THIYAGU . A	II
13	311821105301	AL MUHASIF RIFATH M (H)	II
14	311821105302	HARIHARAN C	II
15	311821105304	PRASAD.N (H)	II
16	311821105305	SANTHOSH V	II

II YEAR CIVIL ENGINEERING NAME LIST			
S.NO	REG NO	NAME OF THE STUDENT	YEAR
1	311821103002	MOHAMED HAROON.M	II
2	311821103004	SHANMUGAM S (H)	II
3	311821103301	MOHAMED KAIF	II

**PRINCIPAL**

Mohamed Sathak A.J. College of Engineering  
No.34, Rajiv Gandhi Salai (GMR)  
Chennai - 600103, TN.





# MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING

(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai)



## III YEAR ECE NAME LIST

S.NO	REG NO	NAME OF THE STUDENT	YEAR
1	311820106001	ABINAYA K	III
2	311820106002	ABITHA B	III
3	311820106003	AFLAL AHAMED M	III
4	311820106004	AHMAD SYED SEMAR	III
5	311820106005	AMUDESHWARAN S	III
6	311820106006	BASHARATHULLA A	III
7	311820106007	CAROL PERSY N	III
8	311820106009	JANANI E	III
9	311820106010	JASEEM MOHAMED P	III
10	311820106013	MADHIVANAN R	III
11	311820106014	MOHAMED MUKSHITH N	III
12	311820106016	NIRMAL K	III
13	311820106020	SATHESH KUMAR V	III
14	311820106021	SHAHRUKH FAKRUDEEN K	III
15	311820106022	SHAIK ABDULLA A	III
16	311820106303	GIRISH .R	III
17	311820106305	KAMALI.D	III
18	311820106306	MOHAMED NAYEEM B	III
19	311820106702	KISHORE R	III

## II YEAR MECH NAME LIST

S.NO	REG NO	NAME OF THE STUDENT	YEAR
1	311821114001	AADIL T	II
2	311821114003	DHANUSH ADITHYA S	II
3	311821114010	MOHAMED FAZID S	II
4	311821114012	NARESH.P	II
5	311821114014	SANDEEP . S	II
6	311821114016	SHAIK IRFAN	II
7	311821114017	SHAILESH KUMAR P	II
8	311821114301	ABDUR RAHMAN J	II
9	311821114303	MOHAMED ANWAR TA	II

*Principal*  
Mohamed Sathak A.J. College of Engineering  
No.34, Rajiv Gandhi Salai (Old)  
Sipcot - IT Highway Egattur  
Chennai - 603103.





**MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING**  
(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai)



10	311821114304	RASOOL MOHAMED	II
11	311821114305	SHAMMER AHAMED	II
12	311821114306	SWARUPAMALVAN R	II
13	311821114307	SYED MOHAMMED	II
14	311821114701	MOHAMED SAMEEM P	II

Total number of Students: 52 No,s

Faculty In-charge:

**Rakesh R AP/Civil**

**Anupreyaa K AP/EEE**

*[Handwritten Signature]* 10/2/23

**R PRINCIPAL**  
MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING  
No. 34, Rajiv Gandhi Road, (OMR) SIPCOT - II Park  
Sivasekari, Chennai - 603103

*[Handwritten Signature]*  
**PRINCIPAL**  
Mohamed Sathak A.J. College of Engineering  
No.34, Rajiv Gandhi Road, (OMR)  
SIPCOT - II Highway Egmore  
Chennai - 603103.



**MOHAMED SATHAK A J COLLEGE OF ENGINEERING, Chennai - 603103**

**EXTERNAL EVENT\* PARTICIPATION**

Department	Training and Placement	Academic Year	2022-2023
Year / Semester	II/IV	Date (s) of Event	10.02.2023
Total strength of the class	52	No. of Students Participating	Boys: 52 Girls: 00
Departure time	9:30 AM	Arrival time	3:00 PM

Name of the Organization / Location with Address	IITM Research Park
Contact person	Mrs.Shalini Srivatsava
Contact email ID & Phone number	<a href="mailto:shalini@incubation.iitm.ac.in">shalini@incubation.iitm.ac.in</a>
Accompanying staff	Mr.R.Rakhesh , Mrs.K.Anupreyaa
Designation	AP/ Civil, AP/ EEE
Contact number	7020771949/9488012670
Transport required if any	Yes
Pickup point & Time	MSAJCE-09:30 AM
Food required if any (For Hostellers)	Yes
Budget required	-

**Enclosure:**

Documents	YES/NO
Permission Letter	YES
Students Name List	YES
Detail of Scheduled visit	YES
Reservation Details/Tickets	NO
Boarding & Lodging Details	NO
Consent form – From Parent's & Student	NO

\*Industrial Visit / NSS / Sports / UBA / State & National Competition / Camp

Mohamed Sathak A.J. College of Engineering  
No.34, Rajiv Gandhi Salai (OMR)  
Sipcot - IT Highway Egattur,  
Chennai - 603103.

Sign of the Coordinator

Sign of the HoD / Head-Student Affairs with date  
TPO

**MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING**

(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai)

**Department of Training and Placement**  
**Industrial Visit : IIT Madras Research Park – Students Name List**

II YEAR EEE NAME LIST				Student Signatu re
S.NO	REG NO	NAME OF THE STUDENT	YEAR	
1	311821105001	ABDUL MALIK J (H)	II	
2	311821105002	DILLIGANESH A	II	
3	311821105004	KARTHICK A	II	
4	311821105005	MOHAMED BASIL S (H)	II	
5	311821105006	MOHAMED IZZAT. A	II	
6	311821105008	MOHANRAJ.K (H)	II	
7	311821105010	NAGARAJ. B	II	
8	311821105011	SHARAIR SARFAN S.A (H)	II	
9	311821105012	SRIKARTHIK.V	II	
10	311821105013	SYED HIFSUL RAHMAN F	II	
11	311821105014	THAMEEM ANSAARI I.S (H)	II	
12	311821105015	THIYAGU . A	II	
13	311821105301	AL MUHASIF RIFATH M (H)	II	
14	311821105302	HARIHARAN C	II	
15	311821105304	PRASAD.N (H)	II	
16	311821105305	SANTHOSH V	II	

II YEAR CIVIL ENGINEERING NAME LIST				Student Signature
S.NO	REG NO	NAME OF THE STUDENT	YEAR	
1	311821103002	MOHAMED HAROON.M	II	
2	311821103004	SHANMUGAM S (H)	II	
3	311821103301	MOHAMED KAIF	II	

  
PRINCIPAL  
Mohamed Sathak A.J. College of Engineering  
No.34, Rajiv Gandhi Salai (OMR)  
Sipcot - IT Highway Egattur,  
Chennai - 603103.



# MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING

(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai)



III YEAR ECE NAME LIST				Student Signature
S.NO	REG NO	NAME OF THE STUDENT	YEAR	
1	311820106001	ABINAYA K	III	K. A
2	311820106002	ABITHA B	III	Abitha
3	311820106003	AFLAL AHAMED M	III	Aflal
4	311820106004	AHMAD SYED SEMAR	III	Ahmad
5	311820106005	AMUDESHWARAN S	III	Amudeshwaran
6	311820106006	BASHARATHULLA A	III	Basharathulla
7	311820106007	CAROL PERSY N	III	Carol
8	311820106009	JANANI E	III	Janani
9	311820106010	JASEEM MOHAMED P	III	Jaseem
10	311820106013	MADHIVANAN R	III	Madhivanan
11	311820106014	MOHAMED MUKSHITH N	III	Mukshith
12	311820106016	NIRMAL K	III	Nirmal
13	311820106020	SATHESH KUMAR V	III	Sathesh
14	311820106021	SHAHRUKH FAKRUDEEN K	III	Shahrugh
15	311820106022	SHAIK ABDULLA A	III	Shaik
16	311820106303	GIRISH .R	III	Girish
17	311820106305	KAMALI.D	III	Kamali
18	311820106306	MOHAMED NAYEEM B	III	Nayeem
19	311820106702	KISHORE S	III	Kishore
20	311820106302	S.P. FOUZIA JABEEN	III	S.P. Fouzia

II YEAR MECH NAME LIST				Student Signature
S.NO	REG NO	NAME OF THE STUDENT	YEAR	
1	311821114001	AADIL T	II	Aadil
2	311821114003	DHANUSH ADITHYA S	II	Dhanush
3	311821114010	MOHAMED FAZID S	II	Fazid
4	311821114012	NARESH.P	II	Naresh
5	311821114014	SANDEEP . S	II	Sandeep
6	311821114016	SHAIK IRFAN	II	Shaik
7	311821114017	SHAILESH KUMAR P	II	Shailesh
8	311821114301	ABDUR RAHMAN J	II	Abdur
9	311821114303	MOHAMED ANWAR TA	II	Anwar

**PRINCIPAL**  
Mohamed Sathak A.J. College of Engineering  
No.34, Rajiv Gandhi Salai (OMR)  
Sipcot - IT Highway Egattur,  
Chennai - 600103.



# MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING

(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai)



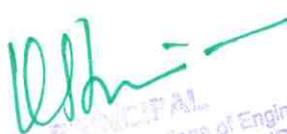
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11	311821114305	SHAMMER AHAMED	II	
12	311821114306	SWARUPAMALVAN R	II	
13	311821114307	SYED MOHAMMED	II	
14	311821114701	MOHAMED SAMEEM P	II	

Total number of Students: 52 No,s

Faculty In-charge:

Rakhesh R AP/Civil

Anupreyaa K AP/EEE

  
PRINCIPAL  
Mohamed Sathak A.J. College of Engineering  
No.34, Rajiv Gandhi Salai (OMR)  
Sipcot - IT Highway Egattur,  
Chennai - 603103.

MOHAMED SATHAK A J COLLEGE OF ENGINEERING, Chennai - 603103

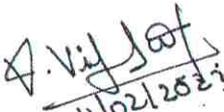
CONSENT FORM – INDUSTRIAL VISIT / TOUR

Undertaking Letter from Accompanying Staff/Faculty - Industrial Visits/Tour

- I/we will take care of the students participating in the tour
- I/We will ensure that the students will abide by rule and regulations of MSAJCE and also the Institution/Organization/Company/industry or the local authority of the place to which such tour is undertaken.
- I/We hereby state that all the parents/guardians of the students concerned are informed of their official trip well in advance and obtained their consent.
- I/We liable for disciplinary action if it is found that the safety of students is compromised in any manner during the tour.
- Students will not be taken or allowed to mountain areas, rivers, canals, beaches, water parks, reservoirs forest areas, etc and I/We are personally liable and answerable for any such untoward incident taking place during the tour. I/We shall ensure that if any activities are necessary in and around water bodies such as boating, swimming, rowing, and sailing, must be carried out under the supervision of a trainer/life guard only.

S. No	Name of the Faculty/Staff	Design. & Dept.	Mobile No	Alternative No	Signature
1	Mr.Rakshesh R	Assistant Professor & Civil	7020771949		
2	Mrs.Anupreyaa	Assistant Professor & EEE	9488012670		

Approved / Not Approved

  
11/02/2023  
Sign of the HoD with date  
TPO

  
Head-Student Affair

Format No.: PLA 12

Rev.No.: 01

Rev.Date: 04.01.21

  
**PRINCIPAL**  
Mohamed Sathak A.J. College of Engineering  
Baffa Gandhi Salai (OMR)  
Chennai - 603103

REPORT ON INDUSTRIAL VISIT

Department of Training and Placement

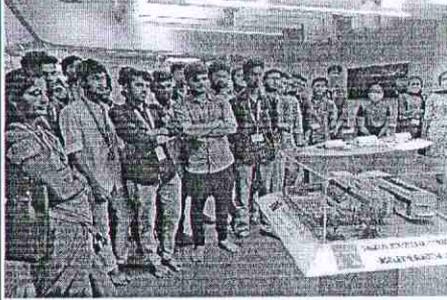
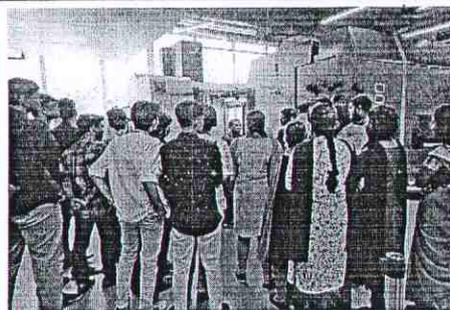
Name of the Industry	IITM- Research Park
Date of Visit	10.02.2023
Contact Person	Mrs.Shalini- Coordinator Incubation Center IITM
Target Audience and No of Students Participated	52 Second Year Students of Civil,Mechanical,EEE,ECE

**Brief note about the Visit / Curriculum gap addressed :**

52 no of students along with 2 faculties started the journey from the college at 9:30 AM to IITM Research park and we reached the location by 10:15 AM by our college bus, we were taken inside the campus by an officer team for better guidance

**Benefit and Knowledge Gained :**We were explained with blooming technologies like electric vehicle from which we came to know about the practical difficulties in the development of the projects when compared with theoretical studies of the same,also the we got the ideas for the startups and finally we visited the various technology centers in the campus.

Relevance with Academic : YES Useful for future projects

Photographs	 <p>Chennai, Tamil Nadu, India B4-04, IT Madras Research Park, Kanegam Rd, Kanegam, Thanamani, Chennai, Tamil Nadu 600113, India Lat 12.990901° Long 80.242824° 10/02/23 10:32 AM GMT +05:30</p>	
	Students in IITM	Students listening to the coordinator
		
	IITM Coordinator explaining the students	Students clarifying their doubts

Supporting Document Required : 1. Communication letters  
2. Students Report  
3. Photo

Faculty In-charge

**PRINCIPAL**  
Mohamed Sathak A.J. College of Engineering  
No.34, Rajiv Gandhi Salai (OMR)  
Sipcot - IT Highway Egattur,  
Chennai - 603103. Rev.No: 1.0

Sign of the HoD with date  
14/02/2023

## REPORT ON VISIT TO IIT-MADRAS - RESEARCH PARK.

Date of visit:- 10.02.2023.

We had a visit ~~at~~ to "The Research Park of IIT-MADRAS" which is situated in Kanagum at Tharamani in Chennai, Tamilnadu.

IITMRP, is India's first university-based research park which aspire to build a knowledge and innovation ecosystem where the industry leaders and scholar can collaborate with state of the art technology.

The visit was initiated and organised by the Department of placement and training of our college on 10<sup>th</sup> Feb 2023.

This was planned with a vision, To acquire the knowledge on emerging technologies and facilities and how to apply theoretical knowledge to solve problems in society.

we around 52 students started from college as accompanied by 2 faculty members, around 9.30 am. and we arrived the destination in next 45 min. we were initially taken to the lobby and we were seperated into 2 Groups, 26 in each group.

we were addressed by a Chief faculty over there.

She gave certain instructions and Agenda of the day.

We were super-excited to enter into IIT-M-research park. Initially we were taken to a cell of Medical Incubator.

where, we were explained on 1) Mobile C<sup>o</sup>tract Surgical surgical unit which was sponsored by Sankara Nethralaya and taken over by same unit. They have conducted a 1000s of surgery in rural areas. which was mind blowing to us. Then we were explained about an instrument which may detect the power of eye without diluting it. Then further we were explained about few sensors. The incubator cell was good in maintainence and the explanation was clear enough. To understand.

Then we were taken to a center of excellence where the Battery for Electric vehical are innovated and designed. They clearly explained about BMS circuit and the advantages of having BMS circuit in Battery was fascinating. It controls the overall power distribution to each cell set up in the case. Followed by we were explained about A.c and D.c motors used in electric vehicles.

Next, we were taken to the start up incubator cell, where we got a idea what a startup really is, and how are they processed to next stage. On observation, we The startup related to technologies have a good support compared to startup related to service.

Finally we were taken to a Advance Machining cell. It is also a Center of Excellence and we were taught about basics of CNC machines and single-armed Industrial robot. The we were done with the day.

It was a fantastic experience, visiting an IIT-Research Park is not a easy task. we wholeheartedly thank our College's Department of Placement and Training.

In Perspective view of Students, we were much & Satisfied and Further we encourage our department to. organise various event and visit similarly.

We Thank our Management, Faculty members and Department for this Beautiful opportunity.

Thank You.

  
**PRINCIPAL**  
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Chennai - 603103.

**MOHAMED SATHAK A J COLLEGE OF ENGINEERING, Chennai - 603103**

**CONSOLIDATED INTERNSHIP DETAILS FOR THE PERIOD OF EVEN SEM 2022 / 2023**

Department : Science & Humanities

Academic Year: 2022-23

S.No	Name of the student	Sem/Year	Name of the Industry	Contact Person Details	Period	Type of Training
1	Mohamed Asif	II/I	LENOVO	psakthivel2@lenovo.com	June-5-20	Manufacturing operations
2	M.Mohammed Jaffer Saadiq	II/I	LENOVO	psakthivel2@lenovo.com	June-5-20	Manufacturing operations
3	Darvesh Ahamed.M	II/I	LENOVO	psakthivel2@lenovo.com	June-5-20	Manufacturing operations
4	Mohamed Hissam M	II/I	LENOVO	psakthivel2@lenovo.com	June-5-20	Manufacturing operations
5	Balaji.R	II/I	LENOVO	psakthivel2@lenovo.com	June-5-20	Manufacturing operations
6	Naleem Ahamed.N	II/I	LENOVO	psakthivel2@lenovo.com	June-5-20	Manufacturing operations
7	Yeshwanth.M	II/I	LENOVO	psakthivel2@lenovo.com	June-5-20	Manufacturing operations
8	Mohamed Umar.M	II/I	LENOVO	psakthivel2@lenovo.com	June-5-20	Manufacturing operations
9	Mohamed Jamees.K	II/I	LENOVO	psakthivel2@lenovo.com	June-5-20	Manufacturing operations
10	Dharnish Babu.B	II/I	LENOVO	psakthivel2@lenovo.com	June-5-20	Manufacturing operations
11	Mohamed Thoufiq	II/I	LENOVO	psakthivel2@lenovo.com	June-5-20	Manufacturing operations
12	Mohamed Hamza.A	II/I	LENOVO	psakthivel2@lenovo.com	June-5-20	Manufacturing operations
13	Idrees Mohamed E	II/I	LENOVO	psakthivel2@lenovo.com	June-5-20	Manufacturing operations
14	Furkhan Nathar Mohamed R	II/I	LENOVO	psakthivel2@lenovo.com	June-5-20	Manufacturing operations
15	Mohamed Idrees N	II/I	LENOVO	psakthivel2@lenovo.com	June-5-20	Manufacturing operations
16	Manigandan M	II/I	LENOVO	psakthivel2@lenovo.com	June-5-20	Manufacturing operations
17	Mohamed Hafeed B	II/I	LENOVO	psakthivel2@lenovo.com	June-5-20	Manufacturing operations
18	Anas Rahman S	II/I	LENOVO	psakthivel2@lenovo.com	June-5-20	Manufacturing operations

Supporting Documets Required : 1. Copy of Communication letters/Mail  
2. Copy of Certificate issued by Industry

#Type of Training: Service/Product/Software/Tools/Management Based

*K. S. Anand*  
Faculty Coordinator

*M. Sathak A. J.*  
23.6.23  
Sign of the HoD with date

Format No : PLA 10

Rev.No.: 1.0

Rev. Date: 04.01.21

*M. Sathak A. J.*  
**PRINCIPAL**  
Mohamed Sathak A.J. College of Engineering  
No.34, Rajiv Gandhi Salai (OMR)  
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Chennai - 603103.

MOHAMED SATHAK A J COLLEGE OF ENGINEERING, Chennai - 603103

CONSOLIDATED INTERNSHIP DETAILS FOR THE PERIOD OF EVEN SEM 2022 /2023

Department : Science & Humanities

Academic Year: 222-23

S.No	Name of the student	Sem/Year	Name of the Industry	Contact Person Details	Period	Type of Training
1	Mohamed Sabir	II/I	LENOVO	psakthivel2@lenovo.com	May 18-30	Manufacturing operations
2	Mohana Sundareshwar	II/I	LENOVO	psakthivel2@lenovo.com	May 18-30	Manufacturing operations
3	Mugesh	II/I	LENOVO	psakthivel2@lenovo.com	May 18-30	Manufacturing operations
4	Karanraj.R	II/I	LENOVO	psakthivel2@lenovo.com	May 18-30	Manufacturing operations
5	Mohamed Suhail.J	II/I	LENOVO	psakthivel2@lenovo.com	May 18-30	Manufacturing operations
6	Karthik.S	II/I	LENOVO	psakthivel2@lenovo.com	May 18-30	Manufacturing operations
7	Karthikeyan.P	II/I	LENOVO	psakthivel2@lenovo.com	May 18-30	Manufacturing operations
8	Mohamed Thoufiq.M	II/I	LENOVO	psakthivel2@lenovo.com	May 18-30	Manufacturing operations
9	Mohamed Irfan	II/I	LENOVO	psakthivel2@lenovo.com	May 18-30	Manufacturing operations
10	Kevin Fannex	II/I	LENOVO	psakthivel2@lenovo.com	May 18-30	Manufacturing operations
11	Mithran U.S	II/I	LENOVO	psakthivel2@lenovo.com	May 18-30	Manufacturing operations
12	Mohamed Afsal.M	II/I	LENOVO	psakthivel2@lenovo.com	May 18-30	Manufacturing operations
13	Mohamed Asik	II/I	LENOVO	psakthivel2@lenovo.com	May 18-30	Manufacturing operations
14	Hari Ragavendra	II/I	LENOVO	psakthivel2@lenovo.com	May 18-30	Manufacturing operations
15	Hariharan	II/I	LENOVO	psakthivel2@lenovo.com	May 18-30	Manufacturing operations
13	Akram Bilal.A	II/I	LENOVO	psakthivel2@lenovo.com	May 18-30	Manufacturing operations
14	Viswajith.G	II/I	LENOVO	psakthivel2@lenovo.com	May 18-30	Manufacturing operations
15	Mr.Prasanna.G	II/I	LENOVO	psakthivel2@lenovo.com	May 18-30	Manufacturing operations
16	Mr.AbullFaize.Y	II/I	LENOVO	psakthivel2@lenovo.com	May 18-30	Manufacturing operations
17	Mr.Sham.A	II/I	LENOVO	psakthivel2@lenovo.com	May 18-30	Manufacturing operations
18	Pradeep Kumar.T	II/I	LENOVO	psakthivel2@lenovo.com	May 18-30	Manufacturing operations
19	Aadil Mohamed.M	II/I	LENOVO	psakthivel2@lenovo.com	May 18-30	Manufacturing operations
20	Praveen.M	II/I	LENOVO	psakthivel2@lenovo.com	May 18-30	Manufacturing operations
21	Riyas Kader.K	II/I	LENOVO	psakthivel2@lenovo.com	May 18-30	Manufacturing operations
22	Sanjay Kumar.S	II/I	LENOVO	psakthivel2@lenovo.com	May 18-30	Manufacturing operations
23	Nafees.Amohamed Riyaz	II/I	LENOVO	psakthivel2@lenovo.com	May 18-30	Manufacturing operations
24	Viswanathan.B	II/I	LENOVO	psakthivel2@lenovo.com	May 18-30	Manufacturing operations

Supporting Documets Required : 1. Copy of Communication letters/Mail  
2. Copy of Certificate issued by Industry

#Type of Training: Service/Product/Software/Tools/Management Based

K. Sripriya  
Faculty Coordinator

Signature of the HoD with date 7.6.23

Format No. PLA 10

Rev No : 1.0

Rev. Date: 04.01.21

Signature of the Principal

**PRINCIPAL**  
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Sipcot - IT Highway Egattur,  
Chennai - 603103.



Placement Cell &lt;placement@msajce-edu.in&gt;

**Request for Internship - Reg**

1 message

**Placement Officer** <placement@msajce-edu.in>

Sat, Jun 3, 2023 at 3:55 PM

To: psakthivel2@lenovo.com

Cc: hello@timeless.co, Manju Dr &lt;headir@msajce-edu.in&gt;

Respected Sir,

Based on the reference from Dr.I Manju, Head IQAC, I am requesting you to grant permission for an internship for the batch of 18 students from Monday 05/06/2023 and do the needful.

Kindly find the attachment

**With Thanks & Regards,****Vigneshwaran V****Placement Officer,****Department of Training and Placement,****Mohamed Sathak AJ College of Engineering,****7904117425****MSAJCE WEBLINK****Lenovo Internship Even Sem 22-23 B2.xlsx**

11K

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RBD Icon, Level-2, Doddenakundi Village  
Marathahalli Outer Ring Road  
Bangalore - 560 037, Karnataka, India  
Office 91 80 6826 3000  
Fax 91 80 6826 3003  
CIN No. - U72900KA2005PTC035783

Regional Office:  
Lenovo (India) Private Limited  
RS19/1A-2A, Edayarpalayam Village  
Cuddalore Main Road, Thavalakuppam  
Pondicherry - 605 007.  
LIN No. 1-8575-8707-2  
Office 91 413 2619 400  
Fax 91 413 2619 428

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07.07.2023

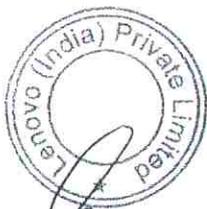
### CERTIFICATE OF IN-PLANT TRAINING

This is to certify that **Mr. MOHAMED ASIF A** student at **MOHAMED SATHAK AJ COLLEGE OF ENGINEERING** has undergone In-Plant Training in Manufacturing Operations for the period from **06.06.2023** to **30.06.2023**.

He has displayed professional acumen during the period of In-plant Training and we appreciate his interest in learning.

We wish him all success in his future endeavours.

For Lenovo (India) Pvt. Ltd.



Authorized Signatory



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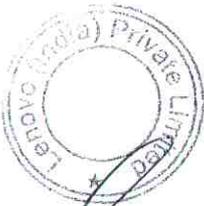
### CERTIFICATE OF IN-PLANT TRAINING

This is to certify that **Mr. MOHAMMED JAFFAR SAADIQ** A student at **MOHAMED SATHAK AJ COLLEGE OF ENGINEERING** has undergone In-Plant Training in Manufacturing Operations for the period from **06.06.2023** to **30.06.2023**.

He has displayed professional acumen during the period of In-plant Training and we appreciate his interest in learning.

We wish him all success in his future endeavours.

For Lenovo (India) Pvt. Ltd.



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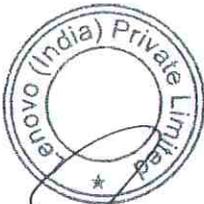
### CERTIFICATE OF IN-PLANT TRAINING

This is to certify that **Mr. DARVESH AHMED M** student at **MOHAMED SATHAK AJ COLLEGE OF ENGINEERING** has undergone In-Plant Training in Manufacturing Operations for the period from **06.06.2023** to **30.06.2023**.

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For Lenovo (India) Pvt. Ltd.



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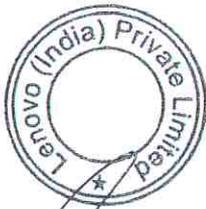
### CERTIFICATE OF IN-PLANT TRAINING

This is to certify that **Mr. MOHAMED HISSAM M** student at **MOHAMED SATHAK AJ COLLEGE OF ENGINEERING** has undergone In-Plant Training in Manufacturing Operations for the period from **06.06.2023** to **30.06.2023**.

He has displayed professional acumen during the period of In-plant Training and we appreciate his interest in learning.

We wish him all success in his future endeavours.

For Lenovo (India) Pvt. Ltd.



Authorized Signatory



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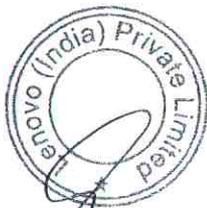
### CERTIFICATE OF IN-PLANT TRAINING

This is to certify that **Mr. BALAJI R** student at **MOHAMED SATHAK AJ COLLEGE OF ENGINEERING** has undergone In-Plant Training in Manufacturing Operations for the period from **06.06.2023** to **30.06.2023**.

He has displayed professional acumen during the period of In-plant Training and we appreciate his interest in learning.

We wish him all success in his future endeavours.

For Lenovo (India) Pvt. Ltd.



Authorized Signatory

**PRINCIPAL**  
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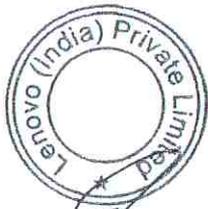
### CERTIFICATE OF IN-PLANT TRAINING

This is to certify that **Mr. NALEEM AHAMED N** student at **MOHAMED SATHAK AJ COLLEGE OF ENGINEERING** has undergone In-Plant Training in Manufacturing Operations for the period from **06.06.2023** to **30.06.2023**.

He has displayed professional acumen during the period of In-plant Training and we appreciate his interest in learning.

We wish him all success in his future endeavours.

For Lenovo (India) Pvt. Ltd.



Authorized Signatory



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07.07.2023

### CERTIFICATE OF IN-PLANT TRAINING

This is to certify that **Mr. YESHWANTH M** student at **MOHAMED SATHAK AJ COLLEGE OF ENGINEERING** has undergone In-Plant Training in Manufacturing Operations for the period from **06.06.2023** to **30.06.2023**.

He has displayed professional acumen during the period of In-plant Training and we appreciate his interest in learning.

We wish him all success in his future endeavours.

For Lenovo (India) Pvt. Ltd.



Authorized Signatory



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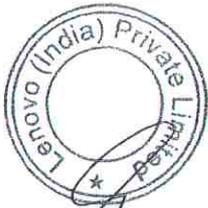
### CERTIFICATE OF IN-PLANT TRAINING

This is to certify that **Mr. MOHAMED OMAR M** student at **MOHAMED SATHAK AJ COLLEGE OF ENGINEERING** has undergone In-Plant Training in Manufacturing Operations for the period from **06.06.2023** to **30.06.2023**.

He has displayed professional acumen during the period of In-plant Training and we appreciate his interest in learning.

We wish him all success in his future endeavours.

For Lenovo (India) Pvt. Ltd.



Authorized Signatory

A handwritten signature in green ink, appearing to be "M. Sathak A.J.", written over a blue horizontal line.

**PRINCIPAL**  
Mohamed Sathak A.J. College of Engineering  
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### CERTIFICATE OF IN-PLANT TRAINING

This is to certify that **Mr. MOHAMED JAMEES K** student at **MOHAMED SATHAK AJ COLLEGE OF ENGINEERING** has undergone In-Plant Training in Manufacturing Operations for the period from **06.06.2023** to **30.06.2023**.

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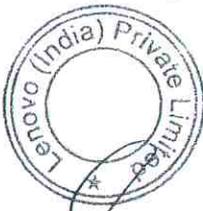
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This is to certify that **Mr. DHARNISH BABU PAGALVAN B** student at **MOHAMED SATHAK AJ COLLEGE OF ENGINEERING** has undergone In-Plant Training in Manufacturing Operations for the period from **06.06.2023** to **30.06.2023**.

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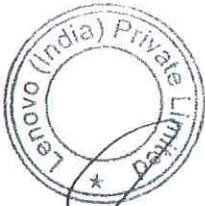
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This is to certify that **Mr. MOHAMMED HAMZA A** student at **MOHAMED SATHAK AJ COLLEGE OF ENGINEERING** has undergone In-Plant Training in Manufacturing Operations for the period from **06.06.2023** to **30.06.2023**.

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This is to certify that **Mr. IDREES MOHAMED E** student at **MOHAMED SATHAK AJ COLLEGE OF ENGINEERING** has undergone In-Plant Training in Manufacturing Operations for the period from **06.06.2023** to **30.06.2023**.

He has displayed professional acumen during the period of In-plant Training and we appreciate his interest in learning.

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### CERTIFICATE OF IN-PLANT TRAINING

This is to certify that **Mr. FURKHAN NATHAR MOHAMED R** student at **MOHAMED SATHAK AJ COLLEGE OF ENGINEERING** has undergone In-Plant Training in Manufacturing Operations for the period from **06.06.2023** to **30.06.2023**.

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This is to certify that **Mr. MOHAMED IDREES N** student at **MOHAMED SATHAK AJ COLLEGE OF ENGINEERING** has undergone In-Plant Training in Manufacturing Operations for the period from **06.06.2023** to **30.06.2023**.

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### CERTIFICATE OF IN-PLANT TRAINING

This is to certify that **Mr. MANIGANDAN M** student at **MOHAMED SATHAK AJ COLLEGE OF ENGINEERING** has undergone In-Plant Training in Manufacturing Operations for the period from **06.06.2023** to **30.06.2023**.

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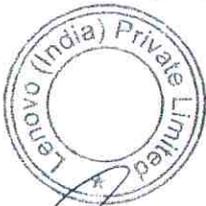
### CERTIFICATE OF IN-PLANT TRAINING

This is to certify that **Mr. ANAS RAHMAN S** student at **MOHAMED SATHAK AJ COLLEGE OF ENGINEERING** has undergone In-Plant Training in Manufacturing Operations for the period from **06.06.2023** to **30.06.2023**.

He has displayed professional acumen during the period of In-plant Training and we appreciate his interest in learning.

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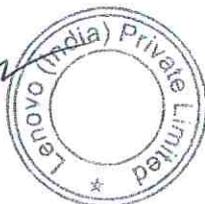
This is to certify that **Mr. MOHAMMED SABIR S** student at **MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING** has undergone **9 DAYS** In-Plant Training in Manufacturing Operations during the month of **May'2023**.

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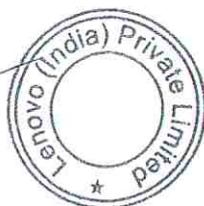
This is to certify that **Mr. MOHANA SUNDARESHWAR A** student at **MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING** has undergone **8 DAYS** In-Plant Training in Manufacturing Operations during the month of **May'2023**.

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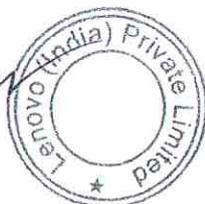
This is to certify that **Mr. MUGESH K** student at **MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING** has undergone **9 DAYS** In-Plant Training in Manufacturing Operations during the month of **May'2023**.

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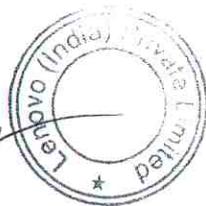
This is to certify that **Mr. KARANRAJ R** student at **MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING** has undergone **9 DAYS** In-Plant Training in Manufacturing Operations during the month of **May'2023**.

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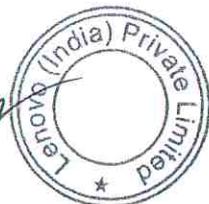
This is to certify that **Mr. MOHAMED SUHAIL J** student at **MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING** has undergone **9 DAYS** In-Plant Training in Manufacturing Operations during the month of **May'2023**.

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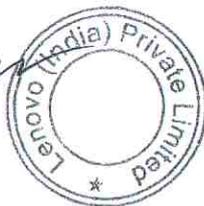
This is to certify that **Mr. MOHAMED THOUFIQ M** student at **MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING** has undergone **10 DAYS** In-Plant Training in Manufacturing Operations during the month of **May'2023**.

He has displayed professional acumen during the period of In-plant Training and we appreciate his interest in learning.

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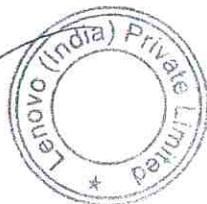
This is to certify that **Mr. MOHAMMED IRFAN M** student at **MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING** has undergone **8 DAYS** In-Plant Training in Manufacturing Operations during the month of **May'2023**.

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A handwritten signature in green ink, appearing to be "M. Sathak".

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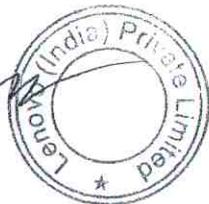
This is to certify that **Mr. KEVIN FANNEX A** student at **MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING** has undergone **8 DAYS** In-Plant Training in Manufacturing Operations during the month of **May'2023**.

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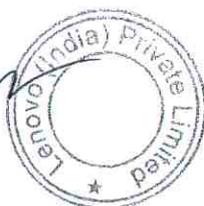
This is to certify that **Mr. MITHRAN U S** student at **MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING** has undergone **8 DAYS** In-Plant Training in Manufacturing Operations during the month of **May'2023**.

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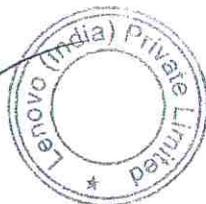
This is to certify that **Mr. MOHAMED AFSAL M** student at **MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING** has undergone **9 DAYS** In-Plant Training in Manufacturing Operations during the month of **May'2023**.

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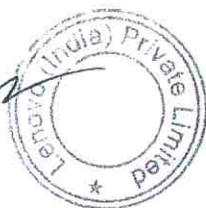
This is to certify that **Mr. MOHAMED ASIK K** student at **MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING** has undergone **9 DAYS** In-Plant Training in Manufacturing Operations during the month of **May'2023**.

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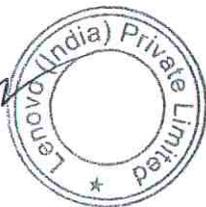
This is to certify that **Mr. HARI RAGAVENDRA S** student at **MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING** has undergone **9 DAYS** In-Plant Training in Manufacturing Operations during the month of **May'2023**.

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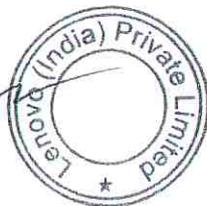
This is to certify that **Mr. AKRAM BILAL A** student at **MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING** has undergone **8 DAYS** In-Plant Training in Manufacturing Operations during the month of **May'2023**.

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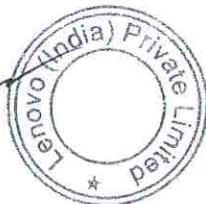
This is to certify that **Mr. VISHWAJITH G** student at **MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING** has undergone **9 DAYS** In-Plant Training in Manufacturing Operations during the month of **May'2023**.

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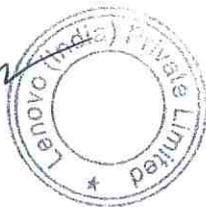
This is to certify that **Mr. PRASANNA G** student at **MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING** has undergone **9 DAYS** In-Plant Training in Manufacturing Operations during the month of **May'2023**.

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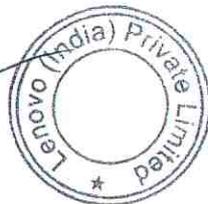
This is to certify that **Mr. ABULFAIZE Y** student at **MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING** has undergone **8 DAYS** In-Plant Training in Manufacturing Operations during the month of **May'2023**.

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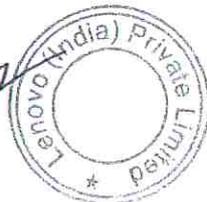
This is to certify that **Mr. SHAM A** student at **MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING** has undergone **8 DAYS** In-Plant Training in Manufacturing Operations during the month of **May'2023**.

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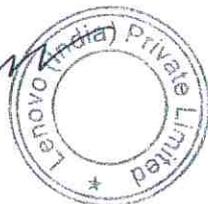
This is to certify that **Mr. PRADEEP KUMAR T** student at **MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING** has undergone **9 DAYS** In-Plant Training in Manufacturing Operations during the month of **May'2023**.

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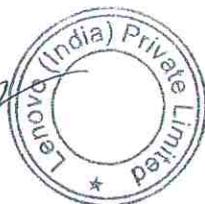
This is to certify that **Mr. AADIL MOHAMED M** student at **MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING** has undergone **9 DAYS** In-Plant Training in Manufacturing Operations during the month of **May'2023**.

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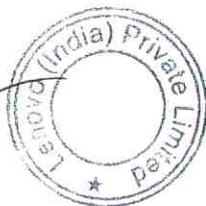
This is to certify that **Mr. SANJAY KUMAR B** student at **MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING** has undergone **10 DAYS** In-Plant Training in Manufacturing Operations during the month of **May'2023**.

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*[Handwritten Signature]*

**PRINCIPAL**  
Mohamed Sathak A.J. College of Engineering  
No.34, Rajiv Gandhi Salai (OMR)  
Sipcot - IT Highway Egattur,  
Chennai - 603103.

Lenovo.com

Registered Office:  
Lenovo (India) Private Limited  
RBD Icon, Level-2, Doddenakundi Village  
Marathahalli Outer Ring Road  
Bangalore - 560 037, Karnataka, India.  
Office 91 80 6826 3000  
Fax 91 80 6826 3003  
CIN No. - U72900KA2005PTC035783

Regional Office:  
Lenovo (India) Private Limited  
RS19/1A-2A, Edayarpalayam Village  
Cuddalore Main Road, Thavalakuppam  
Pondicherry - 605 007.  
LIN No. 1-8575-8707-2  
Office 91 413 2619 400  
Fax 91 413 2619 428

Lenovo

09.06.2023

### CERTIFICATE OF IN-PLANT TRAINING

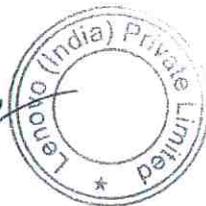
This is to certify that **Mr. NAFEES A** student at **MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING** has undergone **9 DAYS** In-Plant Training in Manufacturing Operations during the month of **May'2023**.

He has displayed professional acumen during the period of In-plant Training and we appreciate his interest in learning.

We wish him all success in his future endeavours.

For Lenovo (India) Pvt. Ltd.

Authorized Signatory



**PRINCIPAL**  
Mohamed Sathak A.J. College of Engineering  
No.34, Rajiv Gandhi Salai (OMR)  
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Chennai - 603103.

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LIN No. 1-8575-8707-2  
Office 91 413 2619 400  
Fax 91 413 2619 428

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09.06.2023

### CERTIFICATE OF IN-PLANT TRAINING

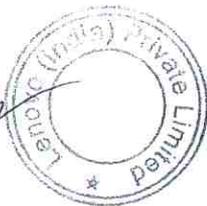
This is to certify that **Mr. MOHAMMED RIYAZ J** student at **MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING** has undergone **5 DAYS** In-Plant Training in Manufacturing Operations during the month of **May'2023**.

He has displayed professional acumen during the period of In-plant Training and we appreciate his interest in learning.

We wish him all success in his future endeavours.

For Lenovo (India) Pvt. Ltd.

Authorized Signatory



PRINCIPAL

Mohamed Sathak A.J. College of Engineering  
No.34, Rajiv Gandhi Salai (OMR)  
Sipcot - IT Highway Egattur,  
Chennai - 603103.

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Marathahalli Outer Ring Road  
Bangalore - 560 037, Karnataka, India.  
Office 91 80 6826 3000  
Fax 91 80 6826 3003  
CIN No. - U72900KA2005PTC035783

Regional Office  
Lenovo (India) Private Limited  
RS19/1A-2A, Edayarpalayam Village  
Cuddalore Main Road, Thavalakuppam  
Pondicherry - 605 007.  
LIN No 1-8575-8707-2  
Office 91 413 2619 400  
Fax 91 413 2619 428

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09.06.2023

### CERTIFICATE OF IN-PLANT TRAINING

This is to certify that **Mr. VISWANATHAN B** student at **MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING** has undergone **9 DAYS** In-Plant Training in Manufacturing Operations during the month of **May'2023**.

He has displayed professional acumen during the period of In-plant Training and we appreciate his interest in learning.

We wish him all success in his future endeavours.

For Lenovo (India) Pvt. Ltd.

Authorized Signatory



**PRINCIPAL**

Mohamed Sathak A.J. College of Engineering  
No.34, Rajiv Gandhi Salai (OMR)  
Sipcot - IT Highway Egattur,  
Chennai - 603103.

Lenovo.com

Registered Office  
Lenovo (India) Private Limited  
RBD Icon, Level-2, Doddenakundi Village  
Marathahalli Outer Ring Road  
Bangalore - 560 037, Karnataka, India  
Office: 91 80 6826 3000  
Fax: 91 80 6826 3003  
CIN No. U72900KA2005PTC0357B3

Regional Office  
Lenovo (India) Private Limited  
RS19/1A-2A, Edayarpalayam Village  
Cuddalore Main Road, Thavalakuppam  
Pondicherry - 605 007  
LIN No. 1-8575-8707-2  
Office: 91 413 2619 400  
Fax: 91 413 2619 428

Lenovo

09.06.2023

### CERTIFICATE OF IN-PLANT TRAINING

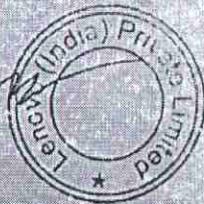
This is to certify that **Mr. KEVIN FANNEX A** student at **MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING** has undergone **8 DAYS** In-Plant Training in Manufacturing Operations during the month of **May'2023**.

He has displayed professional acumen during the period of In-plant Training and we appreciate his interest in learning.

We wish him all success in his future endeavours.

For Lenovo (India) Pvt. Ltd.

Authorized Signatory



PRINCIPAL  
Mohamed Sathak A.J. College of Engineering  
No.04, Kap. Gandhi Sarai (Omk)  
Sipcot - IT Highway Egattur  
Chennai - 603103

Lenovo.com

Registered Office  
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RBD Icon, Level-2, Doddenakundi Village  
Marathahalli Outer Ring Road  
Bangalore - 560 037, Karnataka, India  
Office 91 80 6826 3000  
Fax 91 80 6826 3003  
CIN No - U72900KA2005PTC035783

Regional Office  
Lenovo (India) Private Limited  
RS19/1A-2A, Edayarpalayam Village  
Cuddalore Main Road, Thavalakuppam  
Pondicherry - 605 007  
LIN No 1-8575-8707-2  
Office 91 413 2619 400  
Fax 91 413 2619 428



09.06.2023

### CERTIFICATE OF IN-PLANT TRAINING

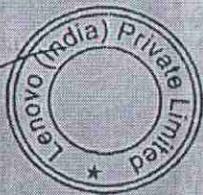
This is to certify that Mr. ABULFAIZE Y student at MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING has undergone 8 DAYS In-Plant Training in Manufacturing Operations during the month of May'2023.

He has displayed professional acumen during the period of In-plant Training and we appreciate his interest in learning.

We wish him all success in his future endeavours.

For Lenovo (India) Pvt. Ltd.

Authorized Signatory



Mohamed Sathak A.J. College  
No 34, Rajiv Gandhi Bypass (U.M.R)  
Sector - 17 Highway Egattur,  
Chennai - 603103.

Registered Office  
Lenovo (India) Private Limited  
RBD Icon, Level 2, Doddenakundi Village  
Marathahalli, Outer Ring Road  
Bangalore - 560 037, Karnataka, India  
Office 91 80 6826 3000  
Fax 91 80 6826 3003  
CIN No - U72900KA2005PTC035783

Regional Office  
Lenovo (India) Private Limited  
RS19/1A-2A, Edayarpalayam Village  
Cuddalore Main Road, Thavalakuppam  
Pondicherry - 605 007  
LIN No. 1-8575-8707-2  
Office 91 413 2619 400  
Fax 91 413 2619 428



07.07.2023

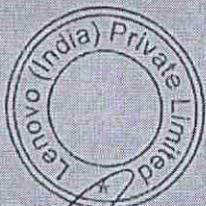
### CERTIFICATE OF IN-PLANT TRAINING

This is to certify that Mr. ANAS RAHMAN S student at MOHAMED SATHAK AJ COLLEGE OF ENGINEERING has undergone In-Plant Training in Manufacturing Operations for the period from 06.06.2023 to 30.06.2023.

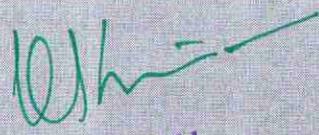
He has displayed professional acumen during the period of In-plant Training and we appreciate his interest in learning.

We wish him all success in his future endeavours.

For Lenovo (India) Pvt. Ltd.



Authorized Signatory

  
**PRINCIPAL**  
Mohamed Sathak A.J. College of Engineering  
No.34, Rajiv Gandhi Salai (OMR)  
Sipcot - IT Highway Egattur,  
Chennai - 603103.

## GE3151 Syllabus PROBLEM SOLVING AND PYTHON PROGRAMMING-Reg 2021

### COURSE OBJECTIVES:

- To understand the basics of algorithmic problem solving.
- To learn to solve problems using Python conditionals and loops.
- To define Python functions and use function calls to solve problems.
- To use Python data structures – lists, tuples, dictionaries to represent complex data. GE3151 Syllabus PROBLEM SOLVING AND PYTHON PROGRAMMING
- To do input/output with files in Python.

### UNIT I COMPUTATIONAL THINKING AND PROBLEM SOLVING

Fundamentals of Computing – Identification of Computational Problems -Algorithms, building blocks of algorithms (statements, state, control flow, functions), notation (pseudo code, flow chart, programming language), algorithmic problem solving, simple strategies for developing algorithms (iteration, recursion). Illustrative problems: find minimum in a list, insert a card in a list of sorted cards, guess an integer number in a range, Towers of Hanoi.

### UNIT II DATA TYPES, EXPRESSIONS, STATEMENTS

Python interpreter and interactive mode, debugging; values and types: int, float, boolean, string, and list; variables, expressions, statements, tuple assignment, precedence of operators, comments; Illustrative programs: exchange the values of two variables, circulate the values of n variables, distance between two points. GE3151 Syllabus PROBLEM SOLVING AND PYTHON PROGRAMMING

### UNIT III CONTROL FLOW, FUNCTIONS, STRINGS

Conditionals: Boolean values and operators, conditional (if), alternative (if-else), chained conditional (if-elif-else); Iteration: state, while, for, break, continue, pass; Fruitful functions: return values, parameters, local and global scope, function composition, recursion; Strings: string slices, immutability, string functions and methods, string module; Lists as arrays. Illustrative programs: square root, gcd, exponentiation, sum an array of numbers, linear search, binary search. GE3151 Syllabus PROBLEM SOLVING AND PYTHON PROGRAMMING

### UNIT IV LISTS, TUPLES, DICTIONARIES

Lists: list operations, list slices, list methods, list loop, mutability, aliasing, cloning lists, list parameters; Tuples: tuple assignment, tuple as return value; Dictionaries: operations and methods;

  
**PRINCIPAL**  
Mohamed Sathya College of Engineering  
No.34, Rajiv Gandhi Salai (OMR)  
Sipcot - IT Highway Egattur,  
Chennai - 603103.



**MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING**

(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai)



From

18/07/2022

Entrepreneurship Development Cell,  
MSAJCE,  
Chennai 603 103.

To

The Principal,  
MSAJCE,  
Chennai 603 103.

Respected Sir,

Sub: Request to conduct the seminar – Reg.

As we are planning to conduct the seminar on “Impact Lecture Series 1 – Intellectual Property Rights Protection” on July 20, 2022 from 10.30 a.m.to 12.30 p.m. in the Ground floor auditorium for all the third year and final year students, Please provide permission to do the same.

Thanking you

Yours Sincerely,

Head – Entrepreneur Development Cell

**PRINCIPAL**  
Mohamed Sathak A.J. College of Engineering  
No.34, Rajiv Gandhi Salai (OMR)  
Sipcot - IT Highway Egattur,  
Chennai - 603103.



## MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING

(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai)



Date: 18/07/2022

### ENTREPRENEUR DEVELOPMENT CELL - CIRCULAR

It is officially announced to all the third year and final year students, that the Entrepreneur Development Cell together with Department of Training and Placement will conduct a seminar on “Impact Lecture Series 1 – Intellectual Property Rights Protection” on July 20, 2022 in Ground Floor auditorium from 10.30 a.m. to 12.30 p.m. Everyone is encouraged to attend the event positively.

*S. Sathak*  
18/7/22

Head – Entrepreneur Development Cell

Copy to:

1. The Chairman, Director
2. Principal
3. All HOD & Staff (to read in Class)
4. Office file.

*S. Sathak*

**PRINCIPAL**  
Mohamed Sathak A.J. College of Engineering  
No.34, Rajiv Gandhi Salai (OMR)  
Sipcot - 17 Highway Egattur,  
Chennai - 603103.



# MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING

(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai)



## EVENT REPORT

<b>Department:</b>	Entrepreneur Development Cell	
<b>Type of Event:</b>	Seminar	
<b>Event Title:</b>	Impact lecture series 1-Intellectual Property rights protection	
<b>Date &amp; Time:</b>	20.07.2022 & 11:00 am to 12:30 pm / 01:30 am to 03:30 pm	
<b>Venue/Mode (Platform):</b>	Ground floor auditorium	
<b>Coordinator(s):</b>	Dr. G. Premalatha, IQAC Co-ordinator	
<b>Details of Participants:</b>	Third year and Final year Students from all Department	
<b>Profile of</b>	<b>Name of the Guest Speakers</b>	Shri. Lakshmi Narayanan A
	<b>Designation</b>	Examiner of Patents and Designs (Group A Gazette)
	<b>Contact Number</b>	9655344612
<b>Write-up on Event</b>	<p>Entrepreneur Development Cell together with Department of Training and placement organized a seminar on "Impact lecture series 1 – Intellectual Property rights protection" for the third year and final year students of all the Departments on 20.07.2022 from 11:00 am to 12:30 pm and 01:30 am to 03:30 pm. The program was started with welcome address by Dr. S. Prasath, Head-Training and Placement. The Chief Guest Shri. Lakshmi Narayanan .A, Examiner of Patents and Designs gave introduction about the Intellectual Property Rights and how it is used for inventor or creator to protect is invention or creation for a certain period of time. During the discussion with participants, experts cleared all the doubts and shared their own experiences. At the end of the session Mr. J. Rajesh, AP/Mech, MSAJCE delivers his vote of thanks.</p>	
<b>Photographs</b>		
	Google session	

  
**PRINCIPAL**  
Mohamed Sathak A.J. College of Engineering  
No.34, Rajiv Gandhi Salai (OMR)  
Sipcot - IT Highway Egattur,  
Chennai - 603103.



# MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING

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The poster features the college logo at the top left, followed by the text 'MOHAMED SATHAK A J COLLEGE OF ENGINEERING' and '34, Rajiv Gandhi Salai (OMR), Saseeri IT Park, Chennai - 603103'. To the right is the AICTE logo. Below this, it says 'MoE's INNOVATION CELL (GOVERNMENT OF INDIA)' and 'Institution's Innovation Council (IIC) and Internal Quality Assurance Cell (IQAC) Organize'. The main title is 'IMPACT LECTURE SERIES SESSION - 1'. The dates and times are '20.07.2022, Lecture 1- 11:00 am to 12:30 pm Lecture 2- 01:30 am to 03:00 pm'. There are two lecture slots: 'Lecture 1 - Intellectual Property Rights Protection' by 'Shri. Lakshmi Narayanan A, Examiner of Patents and Designs (Group 'A' Gazette)' and 'Lecture 2 - How to become a successful Entrepreneur' by 'Jc. Er. A. Suresh, Founder / Chairman AL-TECH Institutes private limited.'. A QR code is labeled 'REGISTER HERE' with the URL 'https://tinyurl.com/MSACEILE-1'. Below the QR code are the roles and names: 'IQAC COORDINATOR Dr. G. Premalatha', 'PRESIDENT - IIC Dr. B. Janashanm', and 'PRINCIPAL Dr. K. S. Srinivasan'. A 'GOOGLE MEET LINK' is provided as 'https://meet.google.com/obw-rtxe-crm'. At the bottom, it states 'E. Certificate will be provided for all the Participants'.

PH: 044-27470024 | mechevents@gmail.com | www.msajce-edu.in

Event poster

Reviewed/Forwarded by:

Signature:

Name: Dr. G. Premalatha,

Designation: IQAC Co-ordinator

Date: 21.07.2022

**PRINCIPAL**  
Mohamed Sathak A.J. College of Engineering  
No.34, Rajiv Gandhi Salai (OMR)  
Sipcot - IT Highway Egattur,  
Chennai - 603103.

MOHAMED SATHAK A J COLLEGE OF ENGINEERING, Chennai - 603103

STUDENT FEEDBACK ON GL / SEMINAR / WORKSHOP

Department: EEE

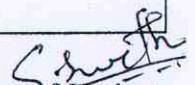
Academic Year: 2022

Name of the Student	<u>Swetha Maria Faustina . S</u>
Year/Sem	<u>III / VI</u>
Name of the Guest	
Name of the Institution/ University/ Industry/R&D Organization	
Event	<u>GL/Seminar/Workshop/Conference/Others</u>
Date of Event	<u>20/07/2022</u>
Was the session Useful?	<u>Nice</u>
Expert Interaction	<u>Excellent / Good / Average</u>
Whether the lecture was related to Subject ? If yes mention the subject	<u>-</u>
Brief Summary/Report of the topic	<u>Intersecting session</u>
General Remarks	<u>9</u>

Format No: FB 01

Rev. No : 1.0



  
Signature of Student  
Rev. Date : 04.01.21

**PRINCIPAL**  
Mohamed Sathak A.J. College of Engineering  
No.34, Rajiv Gandhi Salai (OMR)  
Sipcot - IT Highway Egattur,  
Chennai - 603103.

DEPARTMENT OF TRAINING AND PLACEMENT/EDC/HS

PARTICIPANTS DETAILS

S. No	Candidate Name	College DEPT / YEAR	Contact Number	Signature
1	Aadil T	III yr / Mech	-	
2	Abdul Kaffar. J	III yr / mech	-	<del></del>
3	Dhanush Aditya	3 <sup>rd</sup> Mech	-	
4	Gokulnath. D	III yr mech	-	<del></del>
5	Hajiputhurmydeen.	III yr / mech	-	
6	Hari. M	III yr mech.	-	
7	Jaswin Kumar	mech 3 <sup>rd</sup> .	-	
8	Mohamed Ansari. N	mech	-	<del></del>
9	Mohamed Farid S	mech	-	
10	Mohammad safrees. N	mech. 3 <sup>rd</sup>	-	<del></del>
11	Narash. P	Mech. 3 <sup>rd</sup>	-	
12	Sandeep. S	III Mech.	-	<del></del>
13	Syed Akhmed ST	mech	-	
14	Shaik Irfan. K	Mech 3 <sup>rd</sup> yr.	-	<del></del>
15	Sailesh Kumar P	mech 3 <sup>rd</sup> yr.	-	<del></del>
16	Udhaya kumar. G	Mech 3 <sup>rd</sup> year	-	<del></del>
17	Abdur Rahman. J	Mech 3 <sup>rd</sup>	-	<del></del>

**PRINCIPAL**  
 Mohamed Sathak A.J. College of Engineering  
 No.34, Rajiv Gandhi Salai (OMR)  
 Sipcot - IT Highway Egattur,  
 Chennai - 603103.

MSAJCE

From

The Head of Department  
Department of Civil Engineering  
Mohamed Sathak A.J College of Engineering  
Chennai.

To

The Principal  
Mohamed Sathak A.J College of Engineering  
Chennai.

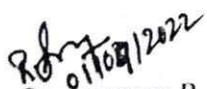
Respected Sir,

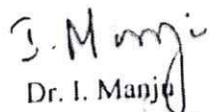
Sub – Value added course registration – Reg.

We have selected the 3D Infrastructural Modelling (Lab integrated theory) as a value added course for this even semester for III Year students of the (AY 2022 – 2023). So I kindly request you to approve the same to update in the Anna University web portal.

Thanking You

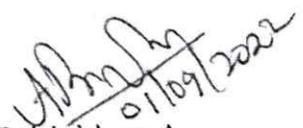
Yours Sincerely

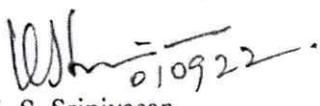
  
Dr. Someswaran R.  
HOD/CIVIL

  
Dr. I. Manjiv  
Technology Centre Head



**PRINCIPAL**  
Mohamed Sathak A.J. College of Engineering  
No.34, Rajiv Gandhi Salai (OMR)  
Sipcot - IT Highway Egattur,  
Chennai - 603103.

  
Dr. Balakrishnan A.  
Academic/Head

  
Dr. K. S. Srinivasan  
Principal



**MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING**  
(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai)



**DEPARTMENT OF CIVIL ENGINEERING**

01-09-2022

MSAJCE

MSAJCE/CIVIL/006/ODD/2022-23

**CIRCULAR**

It is hereby informed to all the faculty members and Third year civil engineering students that the VAC as 3D Infrastructural Modeling for this semester. This course will be handled by Mrs. Janaki V. The venue of the course is BIM lab.

**PRINCIPAL**  
Mohamed Sathak A.J. College of Engineering  
No.34, Rajiv Gandhi Salai (Old IIT)  
Sipcot - IT Highway, Madhavur,  
Chennai 600 030.

**HoD/Civil**

MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING, Chennai - 603103

VAC - STUDENTS NAME LIST

Department of Civil Engineering

Academic Year: 2022-23

Name of the Value Added Course : 3D Infrastructural Modeling			
Yr / Sem : III		Faculty In-charge :	Mrs. Janaki V
Location : BIM Lab		Duration :	40 Periods
Sl.No	Name of the Student	Register No.	Status of Qualifying
1	HABEEB MUSTHAFA M N	311820103001	Completed
2	MOHAMED FAHIM S	311820103002	Completed
3	RAJESH N	311820103003	Completed
4	YOGARAJ M	311820103004	Completed
5	ADIL SIRAJ C P	311820103301	Completed
6	AFSAR HAMEED H	311820103302	Completed
7	AHAMED RISWAN.M	311820103303	Completed
8	ISFAQ AHAMED B	311820103304	Completed
9	JAYASEELAN J	311820103305	Completed
10	LOGESHWARAN P	311820103306	Completed
11	MOHAMED JASSIM M	311820103307	Completed
12	MOHAMED YUSUF ARSHATH A	311820103308	Completed
13	MUSTHAQ J	311820103309	Completed
14	PRADEEP KUMAR K	311820103310	Completed
15	PRIYATHARSAN K	311820103311	Completed
16	RASEED AHAMED M	311820103312	Completed
17	SUDHARSAN A	311820103314	Completed
18			
19			
20			
21			
22			
23			
24			
25			

T. M. M. M.  
Head-Training

Signature of HoD with date

**PRINCIPAL**  
Mohamed Sathak A.J. College of Engineering  
No.34, Rajiv Gandhi Salai (OMR)  
Sipcot - IT Highway Egattur,  
Chennai - 603103.

**MOHAMED SATHAK A J COLLEGE OF ENGINEERING, Chennai - 603103**

**VALUE ADDED COURSE - COURSE CONTENT**

Department of Civil Engineering

Class : III Year

Academic Year: 2022 - 2023

Name of the Value Added Course	3D Infrastructural Modelling	Name of the handling Faculty	Mrs. V.Janaki
--------------------------------	------------------------------	------------------------------	---------------

**Course Objective**

• The objective of this course is to impart necessary and practical knowledge of Building Information Modeling

**Course Outcome**

1. Understand basic concepts of Infrastructure construction planing and able to create new project .
2. To get exposure to 2D & 3D drawings and infrastructure design towards to our country development program
3. Predict and assess the impact of Infrastructure projects and planning of various industrial components
4. Know the requirements of various industries
5. To develop graphical skills for communicating concepts, innovative design, structural detailing and products

**Lesson Plan for VAC**

Sl. No.	Topic	T / R*	Periods Required	Mode of Teaching
		Book		
1	Introduction to 3D Infrastructural Modeling and Revit -	TB	1	Software
2	Creating a project	TB	1	Software
3	co-ordinate systems- reference planes.	TB	1	Software
4	Commands: Initial settings	RB	1	Software
5	Drawing aids	TB	1	Software
6	Drawing basic entities	TB	1	Software
7	Modify commands- Layers	TB	1	Software
8	Text and Dimensioning- Blocks	RB	1	Software
9	Drawing presentation norms and standards.	TB	1	Software
10	Introduction	RB	1	Software
11	Creating walls	RB	1	Software
12	Level	TB	1	Software
13	Girds	RB	1	Software
14	Creating Terrain	RB	1	Software
15	Adding exterior walls	TB	1	Software
16	Adding a roof	TB	1	Software
17	Adding floor	TB	1	Software
18	Adding interior walls.	TB	1	Software
19	Adding door, Adding windows	RB	1	Software
20	Adding components - Structural members	TB	1	Software
21	Using Model Builder in Infraworks	TB	1	Software
22	Creating a proposed street style	TB	1	Software
23	Creating a sketch road	RB	1	Software
24	Converting a sketch road to a design road	TB	1	Software
25	Creating a new design proposal and design road	TB	1	Software
26	Opening an Infraworks model in REVIT Civil 3D	TB	1	Software
27	Adding survey field data to the model.	TB	1	Software
28	Introduction of Creating Documenting	RB	1	Software

*(Handwritten signature)*

**PRINCIPAL**  
 Mohamed Sathak A.J. College of Engineering  
 No.34, Rajiv Gandhi Salai (O.M.R)  
 Sipcot - IT Highway Egattur,  
 Chennai - 603103

29	Documenting the Project	RB	1	Software
30	Continuation of Documenting the Project	RB	1	Software
31	Excercise of Documenting the Project	RB	1	Software
32	Sheets	RB	1	Software
33	Print	RB	1	Software
34	Schedules	RB	1	Software
35	Rooms	RB	1	Software
36	Areas and Legend	RB	1	Software
37	Adding a curtain wall	TB	1	Software
38	Attaching walls to the roof	TB	1	Software
39	Solar study	TB	1	Software
40	Walkthrough -Lights	TB	1	Software
41	Creating elevation	TB	1	Software
42	Modifying the entry deck	TB	1	Software
43	Adding a sloped floor	TB	1	Software
44	Adding stairs and railings	TB	1	Software
45	Modifying the roof	TB	1	Software
<b>Quiz / Mini Projects / Model Developed if any</b>				
Quiz And Model				
<b>Text / Reference Books</b>				
1	Malik R.S., Meo, G.S. (2009) Civil Engineering Drawing, Computech Publication Ltd New Asian.			
2	Sikka, V.B. (2013), A Course in Civil Engineering Drawing, S.K.Kataria& Sons			
<b>Website / URL References</b>				
1	Autodesk Revit 2017 MEP Fundamentals - SDC Publications.			
2	Mastering Autodesk Revit MEP 2016. Autodesk Official Press, Simon Whitbread			

  
Sign. of Course Coordinator

  
Sign. of HoD with date

  
Head-TC

Format No.: TLP 21

Rev. No.: 1.0

Rev. Date:04.01.21

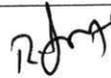


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Chennai - 603103.

Mohamed Sathak A J College of Engineering  
Rajiv Gandhi Salai (OMR), Sipcot IT Park, Chennai - 603103.  
WEB PORTAL - I & II  
Academic year 2022-2023 Form 3 : Webportal Entry Sheet.  
III YEAR - CIVIL ENGINEERING.

S. No	Reg No	Name of the Students	VALUE ADDED COURSE-3D INFRASTRUCTURE MODELLING			
			ATT (20)	MARK (50)	ATT (25)	MARK (50)
1	311820103001	HABEEB MUSTHAF A M N	18	45	23	50
2	311820103002	MOHAMED FAHIM S	19	50	24	50
3	311820103003	RAJESH N	19	45	24	50
4	311820103004	YOGARAJ M	20	48	24	50
5	311820103301	ADIL SIRAJ	18	50	23	50
6	311820103302	AFSAR HAMEED H	18	46	22	50
7	311820103303	AHAMED RISWAN.M	18	45	22	50
8	311820103304	ISFAQ AHAMED B	19	49	23	50
9	311820103305	JAYASEELAN	18	45	21	50
10	311820103306	LOGESHWARAN P	20	48	22	50
11	311820103307	MOHAMED JASSIM	20	50	24	50
12	311820103308	MOHAMED YUSUF ARSHATH A	20	45	25	50
13	311820103309	MUSTHAQ	17	40	20	45
14	311820103310	PRADEEP KUMAR K	20	50	24	50
15	311820103311	PRIYATHARSAN	20	50	24	50
16	311820103312	RASEED AHAMED M	17	48	21	50
17	311820103314	SUDHARSAN	18	45	22	50
<b>SUBJECT FACULTY NAME</b>			Mrs V. Janaki			
<b>SUBJECT FACULTY SIGN.</b>						

CLASS COORDINATOR

  
HOD

  
**PRINCIPAL**  
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No.34, Rajiv Gandhi Salai (OMR)  
Sipcot - IT Highway Egattur,  
Chennai - 603103.



**MOHAMED SATHAK**  
**A.J. COLLEGE OF ENGINEERING**  
Siruseri IT Park, OMR, Chennai - 603 103.

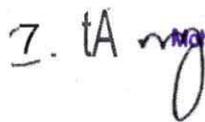


# Certificate of Completion



This is to certify that Mr. / Ms. **RASEED AHAMED M** student of Mohamed Sathak A J College of Engineering, Chennai has successfully completed the training program on **"3D Infrastructure Modeling"** from 3<sup>rd</sup> oct to 31<sup>st</sup> Oct 2022 . Conducted by Centre for Building Information Modeling, Department of Civil Engineering.

  
**Mrs. Janaki V.**  
Course Co - ordinator

  
  
**Dr. I. Manju**  
Head - Technology Centre & Industry Relations

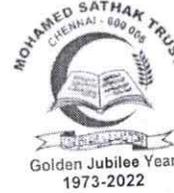
**PRINCIPAL**

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No.34, Rajiv Gandhi Salai (OMR)  
Sipcot - IT Highway Egattur,  
Chennai - 603103.

  
**Dr. K.S. Srinivasan**  
Principal

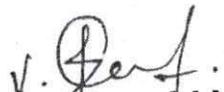


**MOHAMED SATHAK**  
**A.J. COLLEGE OF ENGINEERING**  
Siruseri IT Park, OMR, Chennai - 603 103.

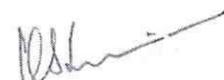


# Certificate of Completion

This is to certify that Mr. / Ms. MOHAMED FAHIM S student of Mohamed Sathak A J College of Engineering, Chennai has successfully completed the training program on **"3D Infrastructure Modeling"** from 3<sup>rd</sup> oct to 31<sup>st</sup> Oct 2022 . Conducted by Centre for Building Information Modeling, Department of Civil Engineering.

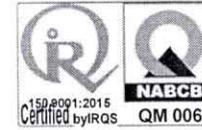
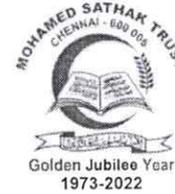
  
**Mrs. Janaki V.**  
Course Co - ordinator

  
**PRINCIPAL**  
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No.34, Rajiv Gandhi Salai (OMR)  
Sipcot - IT Highway Egattur,  
Chennai - 603103.  
**Dr. I. Manju**  
Head - Technology Centre & Industry Relations

  
**Dr. K.S. Srinivasan**  
Principal

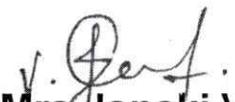


**MOHAMED SATHAK**  
**A.J. COLLEGE OF ENGINEERING**  
Siruseri IT Park, OMR, Chennai - 603 103.



# Certificate of Completion

This is to certify that Mr. / Ms. RAJESH N student of Mohamed Sathak A J College of Engineering, Chennai has successfully completed the training program on "**3D Infrastructure Modeling**" from 3<sup>rd</sup> oct to 31<sup>st</sup> Oct 2022 . Conducted by Centre for Building Information Modeling, Department of Civil Engineering.

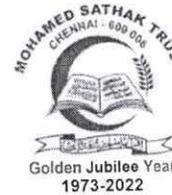
  
**Mrs. Janaki V.**  
Course Co - ordinator

  
**Dr. I. Manju**  
Principal  
Mohamed Sathak A.J. College of Engineering  
No.34, Rajiv Gandhi Selai (OMR)  
Sipcot - IT Highway Egattur,  
Chennai - 603103  
Head - Technology Centre & Industry Relations

  
**Dr. K.S. Srinivasan**  
Principal



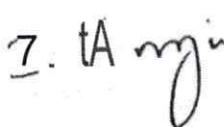
**MOHAMED SATHAK**  
**A.J. COLLEGE OF ENGINEERING**  
Siruseri IT Park, OMR, Chennai - 603 103.



# Certificate of Completion

This is to certify that Mr. / Ms. LOGESHWARAN P student of Mohamed Sathak A J College of Engineering, Chennai has successfully completed the training program on **"3D Infrastructure Modeling"** from 3<sup>rd</sup> oct to 31<sup>st</sup> Oct 2022 . Conducted by Centre for Building Information Modeling, Department of Civil Engineering.

  
**Mrs Janaki V.**  
Course Co - ordinator

  
**Dr. I. Manju**  
Head - Technology Centre & Industry Relations

  
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Mohamed Sathak A.J. College of Engineering  
No.34, Rajiv Gandhi Salai (OMR)  
Sipcot - IT Highway Egattur,  
Chennai - 603103.

  
**Dr. K.S. Srinivasan**  
Principal

**ANNA UNIVERSITY :: CHENNAI - 600025.**  
**OFFICE OF THE CONTROLLER OF EXAMINATIONS**  
**Provisional Results of Nov. / Dec. Examination,2022.**

Page 5/8

Inst.Code/Name : 3118 - MOHAMMED SATHAK A.J.COLLEGE OF ENGINEERING      Semester No. : 05      DATE OF PUBLICATION :DD-MM-YYYY

Branch : 103-B.E. Civil Engineering

Reg. Number	Subject Code ->	CE8501	CE8502	CE8511	CE8512	CE8513	CE8591	CVA034	EN8491	GE8071	ORO551	SB8001	SB8002
Reg. Number	Stud. Name	Grade											
311820103001	HABEEB MUSTHAFA M N	U	B	A+	A+	A	B+	O	U	B	U	A+	
311820103002	MOHAMED FAHIM S	B	B	A+	O	O	B+	O	U	B	B	O	
311820103003	RAJESH N	B	B	O	O	O	A	O	U	B	U	O	
311820103004	YOGARAJ M	B	U	O	O	O	B+	O	U	B	B		O
311820103301	ADIL SIRAJ	B	U	O	A+	O	B+	O	U	B	B	A+	
311820103302	AFSAR HAMEED H	B	U	A+	A+	A+	B	O	U	B	B		O
311820103303	AHAMED RISWAN M	U	U	A	A+	A+	B+	A+	U	U	B	A+	
311820103304	ISFAQ AHAMED B	U	UA	A	A+	A	B	O	U	B	U	A+	
311820103305	JAYASEELAN J	U	U	A	A	A	U	O	U	U	U		A+
311820103306	LOGESHWARAN P	B	B+	O	O	A+	A	O	B	B	B+		O
311820103307	MOHAMED JASSIM M	B	B	A+	O	A+	A+	O	B	B	A		A+
311820103308	MOHAMED YUSUF ARSHATH A	B	U	A+	A+	A+	U	O	B	U	U		A+
311820103309	MUSTHAQ J	U	U	A	A	A	U	A+	U	U	U	B	
311820103310	PRADEEP KUMAR K	U	U	O	A+	O	B	O	B	U	B		O
311820103311	PRIYATHARSAN K	U	B	O	O	O	B	O	U	B	U		O
311820103312	RASEED AHAMED M	U	UA	A	A+	A+	U	O	U	U	B	A+	
311820103314	SUDHARSAN A	U	U	A	A+	A+	U	A+	U	B	B+	A+	



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W - Withdrawal    I - Inadequate Attendance

WH1 - Withheld for Suspected Malpractice    WH(others) - Withheld for want of Clarification,approval,etc.

14-03-2023

Anna University - COE

# Cancer Awareness Rally program



**PRINCIPAL**  
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Chennai - 603103.



# MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING

34, Rajiv Gandhi Salai (OMR), Siruseri IT Park, Chennai - 603 103.



MSAJCE/NSS/EVEN/009

Date: 23.05.2023

## CIRCULAR

It is hereby informed to all the students that the NSS unit of MSAJCE & Prajapita Brahma Kumaris Ishwariya Vishwa Vidyalaya have jointly planned to organize a **Cancer Awareness Rally** on 31.05.2023 Wednesday. Those students who are interested to participate in the rally can give your names to Ms.Usha, AP/English on or before 27.05.2023.

Refreshments will be provided for all the participants.

  
Coordinator

**Dr. A. Balakrishnan**  
Head Academics

  
Principal

Copy to:

1. The Director
2. All the HODs
3. To be read in all the classrooms
4. Notice Board

  
**PRINCIPAL**  
Mohamed Sathak A.J. College of Engineering  
No.34, Rajiv Gandhi Salai (OMR)  
Sipcot - IT Highway Egattur,  
Chennai - 603103.



**MOHAMED SATHAK  
A.J. COLLEGE OF ENGINEERING**  
34, Rajiv Gandhi Salai (OMR), Siruseri IT Park, Chennai - 603 103.



## Report on Cancer Awareness Rally

Date :02.06.2023

Our college NSS unit with Prajapita Brahma Kumaris Ishwariya Vishwa Vidyalaya have jointly organized a **Cancer Awareness Rally** On 31.05.2023. The rally was inaugurated by Mr Aravind Ramesh an Indian politician and a Member of the Legislative Assembly from Sholinganallur, Chennai has felicitated the rally. The rally created awareness among the general public on the harmful effects of tobacco and general health.

The chief guest flagged off an awareness rally at the entrance of Sipcot and also in Navalur. The rally passed through the major streets of the city. Along with Brahma Kumaris volunteers, 60 enthusiastic students participated and raised their voices against the use of tobacco, passionately chanting slogans such as,

'Hope, Fight, and Win. Cancer's tough, but so are you. Cancer may have started the fight, but I will finish it. There is a 'Can' in Cancer because we CAN beat it!'. They suggested precautionary measures like avoiding cholesterol rich fat diet, alcohol intake, reducing obesity based on the BMI standard, curtailing use of tobacco, being aware on aspects like endocrine disruption due to oral contraceptive use, physical inactivity, proper clothing, benefits of breast feeding etc., Later on, they briefed the participants on methods of early detection and curative measures.

Cancer prevention needs to be considered as part of the Non-Communicable Diseases prevention programme as it will make it more effective and feasible. The risk factor, Alcohol, Tobacco, Bad Diet and Physical inactivity are risk factors for most of the Non-Communicable Diseases and have to be approached together as life style modification. These sessions sensitize students to the dangers of tobacco use and its detrimental impact on health and society. In support of the cause, students participated enthusiastically in the rally, showcasing posters and distributing handouts to spread the message.

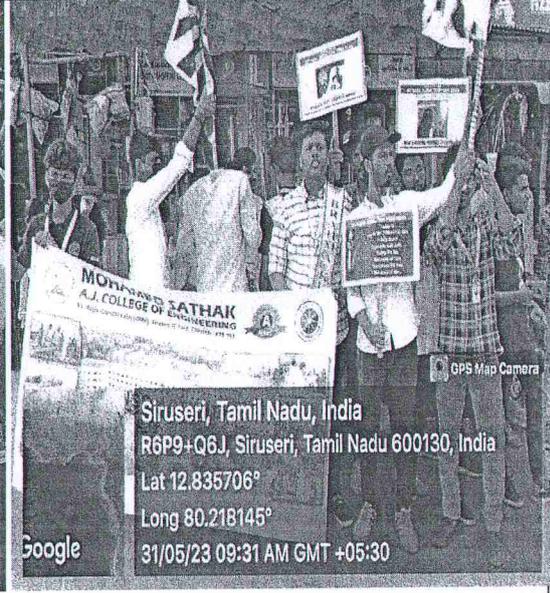
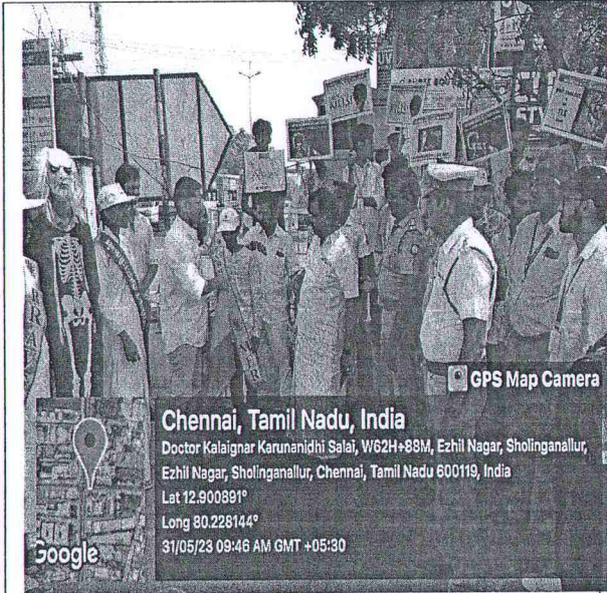
The rally was headed by Dr. Ramesh , Head/ Admin and Dr. A. Balakrishnan, Head, Academics. Mr. Rakesh and Mr. Steephen raj coordinated the students for distributing the pamphlets and chanting the slogans.

*APM*  
NSS Program officers

**PRINCIPAL**

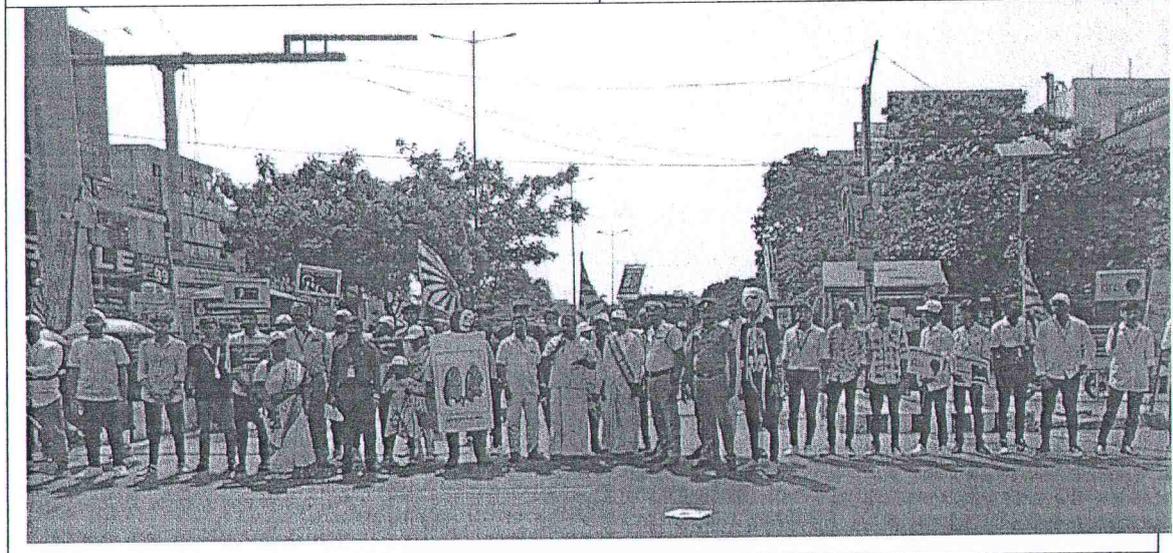
Mohamed Sathak A.J. College of Engineering  
No.34, Rajiv Gandhi Salai (OMR)  
Highway Egattur,  
Chennai - 603103.

**PHOTOGRAPHS:**

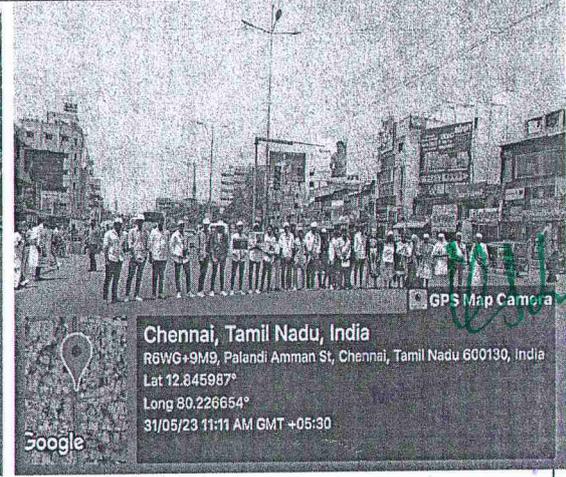
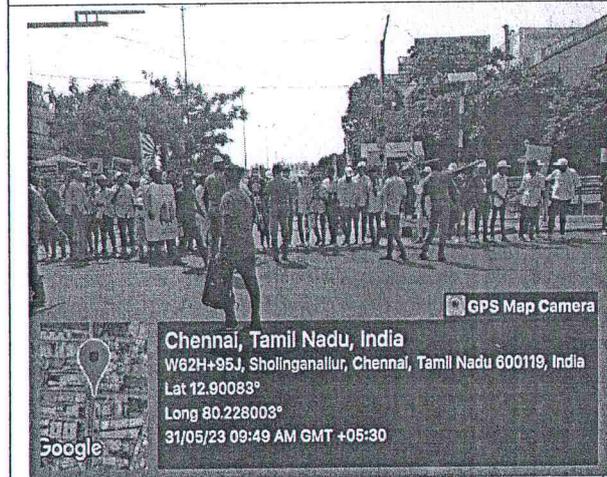


**Chief guest ,Brahma kumaris & NSS students in Inauguration of rally**

**Students rally at SIPCOT**



**Students rally at Navalur**



**CIPAL**  
 College of Engineering  
 andhi Salai (OMR)  
 Highway Egattur,  
 - 003103.

*APM  
 NSS Program Officer*

**List of Participants :**

<b>Cancer/Tobacco Awareness Rally</b>			
<b>Sl.no</b>	<b>Name</b>	<b>Year/Dept</b>	<b>Signature</b>
1	Hamdan Ashraf	I/ CSE	
2	Sakthivel V	I/ CSE	
3	M.Mhd Ashraf	I/ CSE	
4	Mhd Tharik	I/ CSE	ironi b. h.
5	Dharnish	I/ CSE	Dharnish.
6	Mhd Jamees	I/ CSE	
7	Chitharth	I/ CSE	
8	Mhd Idrees	I/ CSE	
9	Pradeep	I/ CSE	
10	M.S.Shajaneshwar	I/ CSE	
11	Zakir Hussain. A	I/ CSE	Zakir Hussain
12	P.Vinoth	I/ CSE	
13	Mohamed MufEEK	I/ CSE	
14	Mohammed Buhari.A	I/ CSE	Buhari
15	Surya	I/ CSE	Surya
16	Suhaib I	I/ CSE	Suhaib I
17	Hanzul Mahrifa M	I/ CSE	Mahrifa
18	Mohamed Omar	I/ AIDS	
19	C.Mohamed Siddiq	I/ AIDS	Md Siddiq
20	Md Jaffar Saadiq	I/ AIDS	Jaffar Saadiq
21	Mithran	I/ AIDS	
22	N.Naleem Ahamed	I/ AIDS	Naleem
23	A.Mohamed Asif	I/ AIDS	Mohamed Asif
24	M.Darvesh Ahmed	I/ AIDS	Darvesh
25	Balaji	I/ AIDS	Balaji
26	Mohamed Hamza	I/ AIDS	Hamza
27	S.Suriyabalaji	I/ CSBS	Suriyabalaji
28	Praveen	I/ CSBS	Praveen
29	Idrees	I/ CSBS	M.Z.P.
30	Karpoor Mohamed Hammad	I/ CSBS	Hammad
31	Mohamed Imthiyaz	I/ CSBS	Imthiyaz
32	Sanjay.M	I/ CSBS	

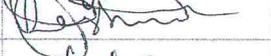
*Handwritten signature and text: "ARSS Program officer"*

**PRINCIPAL**  
 Mohamed Sethak A.J. College of Engineering  
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 Sipcot - IT Highway Egattur,  
 Chennai - 603103.

33	Akeef Hussain.S.A	I/ CSBS	Akeef Hussain
34	Z.Mohamed Zavith	I/ IT	Zavith
35	S.Mohammed Sami	I/ IT	Sami
36	K.Saiyadu Fazulu Deen	I/ IT	Fazulu Deen
37	S Shalif Umar	I/ IT	Shalif Umar
38	H.Hafeezul Naveed	I/ IT	Hafeezul Naveed
39	K.Mohammed Hamza	I/ IT	K. Hamza
40	B.Mohamed Hafeed	I/ IT	Hafeed
41	B . Abimanyu	I/ IT	B. Abimanyu
42	A Askar Ali	I/ IT	A. Askar Ali
43	M.Mohamed Noorul Ameen	I/ IT	Noorul Ameen
44	Abdul saboor	I/ IT	Abdul Saboor
45	M Mohamed Hissam	I/ IT	M. Hissam
46	Mohamed Adel	I/ IT	Mohamed Adel
47	P.K Raj Kumar	I/ IT	P.K. Raj Kumar
48	R. Mohammed Salman	I/ IT	R. Mohammed Salman
49	Mohamed Waseem. A	I/ IT	Mohamed Waseem
50	Abdul Basith	I/ IT	Abdul Basith
51	Rithvik Rakaventhra.D	I/ IT	Rithvik Rakaventhra
53	Yogesh	I/ IT	Yogesh
54	Furkhan Nathar M	I/ IT	Furkhan Nathar
55	Kavisree	I/ IT	Kavisree
56	Leelambikai	I/ IT	Leelambikai
57	Hema .S	I/ IT	Hema .S
58	Kaviya .K	I/ IT	Kaviya .K
59	Dhanalakshmi.B	I/ IT	Dhanalakshmi
60	S.Rakshana	I/ IT	S. Rakshana
62	Saranya	I/ IT	Saranya
63	P.R.Pooja	I/ IT	P.R. Pooja
64	Md Alif Fazil	I/ ECE	Md Alif Fazil
65	Dhanush .S	I/ ECE	Dhanush .S
66	S Hasan Fazil Ansari	I/ ECE	S Hasan Fazil Ansari
67	N.Naren Kumar	I/ ECE	N. Naren Kumar
68	Sathish Kumar.J	I/ ECE	Sathish Kumar
69	Ahmed Suhail	I/ ECE	Ahmed Suhail
70	Ajas Ahamed	I/ ECE	Ajas Ahamed
71	Vasanth Kumar. E	I/ ECE	Vasanth Kumar

**PRINCIPAL**  
 Mohamed Sathak A.J. College of Engineering  
 No.34, Rajiv Gandhi Salai (OMR)  
 Sipoot - IT Highway Egattur,  
 Chennai - 603103.

*Adnan*  
 NSS Program officer

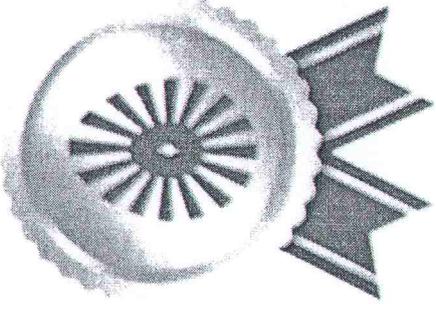
72	Sanjay Kumar. P	I/ ECE	
73	Somamah Faisal. A	I/ ECE	
74	Praveen Kumar. S	I/ ECE	
75	Mohamed Sajith .S	I/ ECE	
76	Reshma	I/ ECE	
77	Nihal	I/ ECE	
78	Mohamed Niyas A	I/ CIVIL	
79	Mohamedirfan	I/ MECH	
80	Niyaz Ahamed.M	I/ MECH	
81	Umar Faruk M. A.	I/ EEE	
82	Mohammed Sarhan. K	I/ MECH	

*CA/Am/In*  
*NSS Program Officer*

*Mohamed Sathak A.J.*

**PRINCIPAL**  
 Mohamed Sathak A.J. College of Engineering  
 No.34, Rajiv Gandhi Salai (OMR)  
 Sipcot - IT Highway Egattur,  
 Chennai - 605103.

# CERTIFICATE OF PARTICIPATION



This certificate is presented to

YOGESH.H.

from ..... Mohamed Sathak A.J. College of Engineering

For participating in the awareness campaign of  
"No Tobacco Day" organised by Brahma Kumaris, Adyar  
on 31 May 2023.

B.K. Muthumani

Dr. BK Muthumani

Director, Brahma Kumaris, Adyar

Brahma Kumaris &  
Medical Wing, RERF

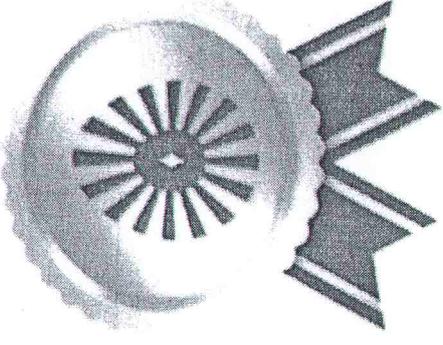
உலக புகையிலை  
ஒழிப்பு தீனம்

Alankar  
ARSS Program Officer

PRINCIPAL  
Mohamed Sathak A.J. College of Engineering  
No.34, Rajiv Gandhi Salai (OMR)  
Sipcot - IT Highway Egattur,  
Chennai - 603102.



# CERTIFICATE OF PARTICIPATION



This certificate is presented to

.....  
Abov Jabbar Mubarak. H.....

from ..... Mohamed Sathak A.J. College of Engineering

For participating in the awareness campaign of  
"No Tobacco Day" organised by Brahma Kumaris, Adyar  
on 31 May 2023.

  
PRINC  
Mohamed Sathak A.J. College  
No.34, Rajiv Gandhi Salar (Cross)  
Sipcot - IT Highway Egattur,  
Chennai - 603109.



**Dr. BK Muthumani**

Director, Brahma Kumaris, Adyar

உலக புகையிலை  
தடுப்பு தினம்

**Brahma Kumaris &  
Medical Wing, RERF**

  
NSS Program Officer





**MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING**  
(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai)



DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

1.3.2 Course that include Experiential Learning through Project Work/Field work/Internship during 2022-23

S.No	Title of Final Year Project	Subject code & Subjects name related to the Projects
1	FOOTSTEP POWER GENERATION USING PIEZO ELECTRIC SENSOR	EE8551-MICROPROCESSORS AND MICROCONTROLLERS EE8691-EMBEDDED SYSTEMS EE8702-POWER SYSTEM OPERAION AND CONTROL EE8402-TRANSMISSION AND DISTRIBUTION ME8792-POWER PLANT ENGINEERING
2	AUTOMATIC CAR WIPER SYSTEM USING ARDUINO UNO	EE8551-MICROPROCESSORS AND MICROCONTROLLERS EE8691 EMBEDDED SYSTEMS

  
HOD - EEE  
Dr. JEHA.J

**PRINCIPAL**  
Mohamed Sathak A.J. College of Engineering  
No.34, Rajiv Gandhi Salai (OMR)  
Sipcot - IT Highway Egattur,  
Chennai - 603103.

1.3.2.

# FOOT STEP POWER GENERATION USING PIEZOELECTRIC SENSOR

A PROJECT REPORT

*Submitted by*

FAHED S	311819105001
MOHAMED RIJWAN H	311819105002
BHUVANESH S	311819105301

*In partial fulfillment for the award of the degree*

*Of*

**BACHELOR OF ENGINEERING**

**IN**

**DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**



MOHAMED SATHAK AJ COLLEGE OF ENGINEERING

ANNA UNIVERSITY: CHENNAI 600 025

MAY-2023

**PRINCIPAL**  
Mohamed Sathak A.J. College of Engineering  
No.34, Rajiv Gandhi Salai (Old)  
Sipcot - IT Highway Egattur,  
Chennai - 603103.

**ANNA UNIVERSITY: CHENNAI 600 025**

## BONAFIDE CERTIFICATE.

Certificate that this project report "FOOT STEP POWER GENERATION USING PIEZOELECTRIC SENSOR" is a bonafide work of S BHUVANESH (11819105301), S FAHED (311819105001), H MOHAMMED RIJWAN (11819105002) who carried out the project under my supervision.

SIGNATURE

Dr.JEHA.J M.E,Ph.D.,  
HEAD OF THE DEPARTMENT

Department of EEE

Mohamed Sathak AJ College of Engineering,  
Chennai-603103

SIGNATURE

Dr.JEHA.J M.E,Ph.D.,  
HEAD OF THE DEPARTMENT

Department of EEE

Mohamed Sathak AJ College of Engineering,  
Chennai-601103

Project Viva Voice held on ....18-05-2023.....

INTERNAL EXAMINER

EXTERNAL EXAMINER

## ABSTRACT

This project proposes a system for generating electrical power from the mechanical energy produced by human footsteps using piezoelectric sensors. Piezoelectric sensors are a type of transducer that can convert mechanical energy into electrical energy. The proposed system consists of several piezoelectric sensors placed under a floor or a pathway that can detect and convert the pressure exerted by human footsteps into electrical energy. This energy can be stored in batteries or capacitors and used to power low-power electronic devices. An Arduino Nano is used to control and monitor the system, which includes an LCD display to show the power generated by the system.

The project aims to demonstrate the feasibility of generating electrical power from human footsteps and its potential for use in various applications, such as public spaces, airports, and shopping malls, to reduce energy consumption and promote sustainability. Footstep power generation using piezoelectric sensors is an innovative approach to harvesting renewable energy from human footsteps. The system utilizes piezoelectric sensors, which generate an electrical charge in response to mechanical pressure, to convert the mechanical energy from footsteps into electrical energy. This energy can be used to power low-power devices, such as LED lights or small electronic gadgets.

The system's design involves the use of an Arduino nano microcontroller, a piezoelectric sensor, a 12V battery, a charging port, and a 16\*2 LCD display. The piezoelectric sensor is placed beneath a mat, and as people walk over the mat, the sensor generates an electrical charge, which is then stored in the battery or used to power devices. The system has several advantages, including being a sustainable source of energy, having low maintenance costs, and being environmentally friendly. However, the system also has some disadvantages, such as low power output and sensitivity to environmental factors.

  
**PRINCIPAL**  
Mohamed Sathak A. J. College of Engineering  
No.34, Rajiv Gandhi Salai (OMR)  
Chennai - 600103.

## CHAPTER 9

### CONCLUSION

In conclusion, the footstep power generation using piezoelectric sensors is an innovative and sustainable system that can generate electrical energy by harvesting the kinetic energy produced by people walking. The system has several advantages, such as its low cost, simple implementation, and ability to generate energy without any emissions or pollution. Although the system has some limitations, such as its low power output and sensitivity to environmental factors, it has the potential to be used in a variety of applications, such as powering street lights, public transport systems, and smart buildings. Overall, the footstep power generation using piezoelectric sensors is a promising technology that can contribute to the development of sustainable and energy-efficient solutions for the future. The result of the footstep power generation using piezoelectric sensors can vary depending on several factors, such as the number and placement of the sensors, the weight and movement of the people walking, and the efficiency of the energy conversion process. In general, the system can generate a small amount of electrical energy, typically in the range of milliwatts to a few watts, depending on the factors mentioned above. This energy can be stored in batteries or capacitors and used to power low-power devices, such as LED lights or small electronic gadgets. It is important to note that the system's performance may vary depending on the specific implementation and the environment in which it is used. Therefore, it is essential to conduct thorough testing and evaluation to determine the system's optimal design and performance characteristics.



**PRINCIPAL**  
Mohamed Sathak A.J. College of Engineering  
No.34, Rajiv Gandhi Salai (OMR)  
Sipcot - IT Highway Egattur,  
Chennai - 603103.

EE8702

**POWER SYSTEM OPERATION AND CONTROL**

L T P C  
3 0 0 3

**OBJECTIVES:**

To impart knowledge on the following topics

- Significance of power system operation and control.
- Real power-frequency interaction and design of power-frequency controller.
- Reactive power-voltage interaction and the control actions to be implemented for maintaining the voltage profile against varying system load.
- Economic operation of power system.
- SCADA and its application for real time operation and control of power systems

**UNIT I PRELIMINARIES ON POWER SYSTEM OPERATION AND CONTROL 9**

Power scenario in Indian grid – National and Regional load dispatching centers – requirements of good power system - necessity of voltage and frequency regulation - real power vs frequency and reactive power vs voltage control loops - system load variation, load curves and basic concepts of load dispatching - load forecasting - Basics of speed governing mechanisms and modeling - speed load characteristics - regulation of two generators in parallel.

**UNIT II REAL POWER - FREQUENCY CONTROL 9**

Load Frequency Control (LFC) of single area system-static and dynamic analysis of uncontrolled and controlled cases - LFC of two area system - tie line modeling - block diagram representation of two area system - static and dynamic analysis - tie line with frequency bias control – state variability model - integration of economic dispatch control with LFC.

**UNIT III REACTIVE POWER – VOLTAGE CONTROL 9**

Generation and absorption of reactive power - basics of reactive power control – Automatic Voltage Regulator (AVR) – brushless AC excitation system – block diagram representation of AVR loop - static and dynamic analysis – stability compensation – voltage drop in transmission line - methods of reactive power injection - tap changing transformer, SVC (TCR + TSC) and STATCOM for voltage control.

**UNIT IV ECONOMIC OPERATION OF POWER SYSTEM 9**

Statement of economic dispatch problem - input and output characteristics of thermal plant - incremental cost curve - optimal operation of thermal units without and with transmission losses (no derivation of transmission loss coefficients) - base point and participation factors method - statement of unit commitment (UC) problem - constraints on UC problem of UC problem using priority list – special aspects of short term and long term hydrothermal problems.

**UNIT V COMPUTER CONTROL OF POWER SYSTEMS 9**

Need of computer control of power systems-concept of energy control centers and functions – PMU - system monitoring, data acquisition and controls - System hardware configurations - SCADA and EMS functions - state estimation problem – measurements and errors - weighted least square estimation - various operating states - state transition diagram.

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No.34, Rajiv Gandhi Salai (OMR)  
Sipcot - IT Highway Egattur,  
Chennai - 603103.

TOTAL : 45 PERIODS

**OUTCOMES:**

- Ability to understand the day-to-day operation of electric power system.
- Ability to analyze the control actions to be implemented on the system to meet the minute-to-minute variation of system demand.
- Ability to understand the significance of power system operation and control.
- Ability to acquire knowledge on real power-frequency interaction.
- Ability to understand the reactive power-voltage interaction.
- Ability to design SCADA and its application for real time operation.

**TEXT BOOKS:**

1. Olle.I.Elgerd, 'Electric Energy Systems theory - An introduction', McGraw Hill Education Pvt. Ltd., New Delhi, 34th reprint, 2010.
2. Allen. J. Wood and Bruce F. Wollen berg, 'Power Generation, Operation and Control', John Wiley & Sons, Inc., 2016.
3. Abhijit Chakrabarti and Sunita Halder, 'Power System Analysis Operation and Control', PHI learning Pvt. Ltd., New Delhi, Third Edition, 2010.

**REFERENCES**

1. Kothari D.P. and Nagrath I.J., 'Power System Engineering', Tata McGraw-Hill Education, Second Edition, 2008.
2. Hadi Saadat, 'Power System Analysis', McGraw Hill Education Pvt. Ltd., New Delhi, 21st reprint, 2010.
3. Kundur P., 'Power System Stability and Control, McGraw Hill Education Pvt. Ltd., New Delhi, 10th reprint, 2010.

EE8703

RENEWABLE ENERGY SYSTEMS

L	T	P	C
3	0	0	3

**OBJECTIVES:**

To impart knowledge on the following Topics

- Awareness about renewable Energy Sources and technologies.
- Adequate inputs on a variety of issues in harnessing renewable Energy.
- Recognize current and possible future role of renewable energy sources.

**UNIT I RENEWABLE ENERGY (RE) SOURCES**

Environmental consequences of fossil fuel use, Importance of renewable sources of energy, Sustainable Design and development, Types of RE sources, Limitations of RE sources, Present Indian and international energy scenario of conventional and RE sources.

**UNIT II WIND ENERGY**

Power in the Wind – Types of Wind Power Plants(WPPs)–Components of WPPs–Working of WPPs- Siting of WPPs–Grid integration issues of WPPs.

### OUTCOMES:

- Ability to understand the construction and working principle of Synchronous Generator
- Ability to understand MMF curves and armature windings.
- Ability to acquire knowledge on Synchronous motor.
- Ability to understand the construction and working principle of Three phase Induction Motor
- Ability to understand the construction and working principle of Special Machines
- Ability to predetermine the performance characteristics of Synchronous Machines.

### TEXT BOOKS:

1. A.E. Fitzgerald, Charles Kingsley, Stephen. D. Umans, 'Electric Machinery', Mc Graw Hill publishing Company Ltd, 2003.
2. Vincent Del Toro, 'Basic Electric Machines' Pearson India Education, 2016.
3. Stephen J. Chapman, 'Electric Machinery Fundamentals' 4<sup>th</sup> edition, McGraw Hill Education Pvt. Ltd, 2010.

### REFERENCES

1. D.P. Kothari and I.J. Nagrath, 'Electric Machines', McGraw Hill Publishing Company Ltd, 2002.
2. P.S. Bhimbhra, 'Electrical Machinery', Khanna Publishers, 2003.
3. M.N. Bandyopadhyay, 'Electrical Machines Theory and Practice', PHI Learning PVT LTD., New Delhi, 2009.
4. B.R.Gupta, 'Fundamental of Electric Machines' New age International Publishers, 3<sup>rd</sup> Edition, Reprint 2015.
5. Murugesh Kumar, 'Electric Machines', Vikas Publishing House Pvt. Ltd, 2002.
6. Alexander S. Langsdorf, 'Theory of Alternating-Current Machinery', McGraw Hill Publications, 2001.

EE8402

TRANSMISSION AND DISTRIBUTION

L T P C  
3 0 0 3

### OBJECTIVES:

- To study the structure of electric power system and to develop expressions for the computation of transmission line parameters.
- To obtain the equivalent circuits for the transmission lines based on distance and to determine voltage regulation and efficiency.
- To understand the mechanical design of transmission lines and to analyze the voltage distribution in insulator strings to improve the efficiency.
- To study the types, construction of cables and methods to improve the efficiency.
- To study about distribution systems, types of substations, methods of grounding, EHVAC, HVDC and FACTS.

### UNIT I TRANSMISSION LINE PARAMETERS

Structure of Power System - Parameters of single and three phase transmission lines with single and double circuits -Resistance, inductance and capacitance of solid, stranded and bundled conductors, Symmetrical and unsymmetrical spacing and transposition - application of self and mutual GMD; skin and proximity effects -Typical configurations, conductor types and electrical parameters of EHV lines.

<b>UNIT II</b>	<b>MODELLING AND PERFORMANCE OF TRANSMISSION LINES</b>	<b>9</b>
Performance of Transmission lines - short line, medium line and long line - equivalent circuits, phasor diagram, attenuation constant, phase constant, surge impedance - transmission efficiency and voltage regulation, real and reactive power flow in lines - Power Circle diagrams - Formation of Corona – Critical Voltages – Effect on Line Performance.		
<b>UNIT III</b>	<b>MECHANICAL DESIGN OF LINES</b>	<b>9</b>
Mechanical design of OH lines – Line Supports –Types of towers – Stress and Sag Calculation – Effects of Wind and Ice loading. Insulators: Types, voltage distribution in insulator string, improvement of string efficiency, testing of insulators.		
<b>UNIT IV</b>	<b>UNDER GROUND CABLES</b>	<b>9</b>
Underground cables - Types of cables – Construction of single core and 3 core cables - Insulation Resistance – Potential Gradient - Capacitance of Single-core and 3 core cables - Grading of cables - Power factor and heating of cables – DC cables.		
<b>UNIT V</b>	<b>DISTRIBUTION SYSTEMS</b>	<b>9</b>
Distribution Systems – General Aspects – Kelvin's Law – AC and DC distributions - Techniques of Voltage Control and Power factor improvement – Distribution Loss –Types of Substations -Methods of Grounding – Trends in Transmission and Distribution: EHVAC, HVDC and FACTS (Qualitative treatment only).		
<b>TOTAL :</b>		<b>45 PERIODS</b>

**OUTCOMES:**

- To understand the importance and the functioning of transmission line parameters.
- To understand the concepts of Lines and Insulators.
- To acquire knowledge on the performance of Transmission lines.
- To understand the importance of distribution of the electric power in power system.
- To acquire knowledge on Underground Cables
- To become familiar with the function of different components used in Transmission and Distribution levels of power system and modelling of these components.

**TEXT BOOKS:**

1. D.P.Kothari, I.J. Nagarath, 'Power System Engineering', Mc Graw-Hill Publishing Company limited, New Delhi, Second Edition, 2008.
2. C.L.Wadhwa, 'Electrical Power Systems', New Academic Science Ltd, 2009.
3. S.N. Singh, 'Electric Power Generation, Transmission and Distribution', Prentice Hall of India Pvt. Ltd, New Delhi, Second Edition, 2011.

**REFERENCES**

1. B.R.Gupta, 'Power System Analysis and Design' S. Chand, New Delhi, Fifth Edition, 2008.
2. Luces M.Fualken berry, Walter Coffe, 'Electrical Power Distribution and Transmission', Pearson Education, 2007.
3. Arun Ingole, "power transmission and distribution" Pearson Education, 2017
4. J.Brian, Hardy and Colin R.Bayliss 'Transmission and Distribution in Electrical Engineering', Newnes; Fourth Edition, 2012.
5. G.Ramamurthy, "Handbook of Electrical power Distribution," Universities Press, 2013.



# AUTOMATIC CAR WIPER SYSTEM USING ARDUINO UNO

## A PROJECT REPORT

*Submitted by*

SATHIYAN.S	311819105003
STALIN.K	311819105005
AKRAM MOHIUDDIN.F	311819105302

*In partial fulfillment for the award of the degree*

*Of*

**BACHELOR OF ENGINEERING**

**IN**

**DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**



**MOHAMED SATHAK AJ COLLEGE OF ENGINEERING**

**ANNA UNIVERSITY: CHENNAI 600 025**

**MAY 2023**

  
**PRINCIPAL**  
Mohamed Sathak A.J. College of Engineering  
No.34, Rajiv Gandhi Salai (OMR)  
Sipcot - IT Highway Egattur,  
Chennai - 603103.

**ANNA UNIVERSITY: CHENNAI 600 025**

**BONAFIDE CERTIFICATE.**

Certificate that this project report "AUTOMATIC CAR WIPER SYSTEM USING  
DUINO UNO" is a bonafide work of S.SATHIYAN (311819105003), K.STALIN  
(311819105005), F.AKRAM MOHIUDDIN (311819105302) who carried out the project under  
supervision.

  
SIGNATURE

**Dr.JEHA.J M.E,Ph.D.,**  
**HEAD OF THE DEPARTMENT**

Department of EEE

Mohamed Sathak AJ College of Engineering,  
Chennai-603103

  
SIGNATURE

**Dr.KAMALASELVAN M.E,Ph.D.,**  
**SUPERVISOR**

ASSISSTANT PROFESSOR

Department of EEE

Mohamed Sathak AJ College of Engineering,  
Chennai-601103

Project Viva Voice held on ....18-05-2023.....

  
**INTERNAL EXAMINER**

  
**EXTERNAL EXAMINER**

**PRINCIPAL**  
Mohamed Sathak A.J. College of Engineering  
No.34, Rajiv Gandhi Salai (OMR)  
Sipcot - IT Highway Egattur,  
Chennai - 603103.

## ABSTRACT

Turning of a windshield wiper is a manual procedure which requires to be switched on to remove rainfall and debris from the screen. This does not only require driver's attention, but also, causes a certain level of discomfort to the driver and serves as a source of distraction which increases the risk of accidents.

To offer comfort to the driver and essentially reduce the risk of accidents, an automatic rain sensing device has become a necessity. While such a device is available in the market, its high cost and other such limitations have made it less popular in the automobile industry. Aim of this work was to propose another such model in market that limits the cost while maintaining the efficiency.

A rain sensor, a microcontroller and a driver integrated circuit (IC) are the major components used in the construction and seamless working of the proposed device. Falling water is quickly and precisely detected by the rain sensor which then transmits the signal to the second component i.e. microcontroller which in turn energizes the driver IC to switch the required motion of the wipers on using servo motor. This device converts a cumbersome manual operation to a smooth automatic one.

While driving car, driver cannot see on road vehicles. So he tries operating wiper on glass, for that he should often switch on for operating wiper and because of this it might cause vehicle accident. If we apply any kind of sensor on glass which senses the act of sprinkling water, by automation the wiper will be operating automatically. When the water hit the sensor, it will send signal to the system thus moving the wiper motor.

Once the sensor did not detect any water, the wiper will stop. This will reduce the weaknesses which have been stated at beginning. Additional plan to this invention is to make the wiper automatically push up from the windscreen when the engine shut off.



**PRINCIPAL**  
Mohamed Sathak A.J. College of Engineering  
No.34, Rajiv Gandhi Salai (OMR)  
Sipcot - IT Highway Egattur,  
Chennai - 603103.

## CHAPTER 7

### CONCLUSION

The automatic car wiper system was developed to sense the rain and wipe the glass by using the windshield wipers. By using automatic car wiper system, the purpose of driver's response to control the wiper is automated. It is demonstrated and proved that the rain sensors response to the rain for moving the windshield wipers is less than 400 milliseconds.

Though the automatic car wiper is designed using rain sensor and Arduino, it can be advanced by replacing the rain sensors with IR sensors for accurately determining and detecting rainfall. If you opt for using a wiper which is not only economical but also efficient, using a rain sensor is the best. To advance the movement and to change the system different sensors which are useful for this purpose can be selected.

### FUTURE SCOPE

The future scope of automatic car wipers is promising, with advancements in technology and innovations in the automotive industry. Here are some potential areas of development for automatic car wipers:

**Integration with other car sensors:** Automatic car wipers could be integrated with other sensors in the car, such as cameras and radars, to provide a more comprehensive and advanced driver assistance system. This integration could allow the wipers to adjust their speed and frequency based on the speed of the car, distance from other vehicles, and other road conditions.

**Improved rain sensing technology:** New advancements in rain sensing technology could result in even more accurate and sensitive rain sensors. This could allow the wipers to detect moisture more quickly and adjust their performance accordingly.

**Energy-efficient systems:** Future automatic car wipers could be designed to be more energy-efficient, reducing the load on the car's electrical system and improving fuel efficiency.



**PRINCIPAL**

Mohamed Sathak A.J. College of Engineering  
No.34, Rajiv Gandhi Salai (OMR)  
Sipcot - IT Highway Egattur,  
Chennai - 603103.



**UNIT IV PERIPHERAL INTERFACING** 9  
 Study on need, Architecture, configuration and interfacing, with ICs: 8255, 8259, 8254, 8279, - A/D and D/A converters & Interfacing with 8085 & 8051.

**UNIT V MICRO CONTROLLER PROGRAMMING & APPLICATIONS** 9  
 Simple programming exercises- key board and display interface –Control of servo motor- stepper motor control- Application to automation systems.

**TOTAL : 45 PERIODS**

**OUTCOMES:**

- Ability to acquire knowledge in Addressing modes & instruction set of 8085 & 8051.
- Ability to need & use of Interrupt structure 8085 & 8051.
- Ability to understand the importance of Interfacing
- Ability to explain the architecture of Microprocessor and Microcontroller.
- Ability to write the assembly language programme.
- Ability to develop the Microprocessor and Microcontroller based applications.

**TEXT BOOKS:**

1. Sunil Mathur & Jeebananda Panda, "Microprocessor and Microcontrollers", PHI Learning Pvt. Ltd, 2016.
2. R.S. Gaonkar, 'Microprocessor Architecture Programming and Application', with 8085, Wiley Eastern Ltd., New Delhi, 2013.
3. Muhammad Ali Mazidi & Janice Gilli Mazidi, R.D. Kinely 'The 8051 Micro Controller and Embedded Systems', PHI Pearson Education, 5th Indian reprint, 2003.

**REFERENCES**

1. Krishna Kant, "Microprocessor and Microcontrollers", Eastern Company Edition, Prentice Hall of India, New Delhi, 2007.
2. B.RAM," Computer Fundamentals Architecture and Organization" New age International Private Limited, Fifth edition, 2017.
3. Soumitra Kumar Mandal, Microprocessor & Microcontroller Architecture, Programming & Interfacing using 8085, 8086, 8051, McGraw Hill Edu, 2013.
4. Ajay V. Deshmukh, 'Microcontroller Theory & Applications', McGraw Hill Edu, 2016
5. Douglas V. Hall, 'Microprocessor and Interfacing', McGraw Hill Edu, 2016.

**EE8552**

**POWER ELECTRONICS**

L	T	P	C
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**OBJECTIVES:**

To impart knowledge on the following Topics

- Different types of power semiconductor devices and their switching
- Operation, characteristics and performance parameters of controlled rectifiers
- Operation, switching techniques and basics topologies of DC-DC switching regulators.
- Different modulation techniques of pulse width modulated inverters and to understand harmonic reduction methods.
- Operation of AC voltage controller and various configurations.

**PRINCIPAL**  
 Meenamed Sathyanarayanan College of Engineering  
 No.34, Rajiv Gandhi Satai (OMR)  
 Sipcot - IT Highway Egattur,  
 Chennai - 603103.

- Ability to acquire knowledge on Fault analysis.
- Ability to model and understand various power system components and carry out power flow, short circuit and stability studies.

**TEXT BOOKS:**

1. John J. Grainger, William D. Stevenson, Jr, 'Power System Analysis', Mc Graw Hill Education (India) Private Limited, New Delhi, 2015.
2. Kothari D.P. and Nagrath I.J., 'Power System Engineering', Tata McGraw-Hill Education, Second Edition, 2008.
3. Hadi Saadat, 'Power System Analysis', Tata McGraw Hill Education Pvt. Ltd., New Delhi, 21st reprint, 2010.

**REFERENCES**

1. Pai M A, 'Computer Techniques in Power System Analysis', Tata Mc Graw-Hill Publishing Company Ltd., New Delhi, Second Edition, 2007.
2. J. Duncan Glover, Mulukutla S.Sarma, Thomas J. Overbye, 'Power System Analysis & Design', Cengage Learning, Fifth Edition, 2012.
3. Gupta B.R., 'Power System - Analysis and Design', S. Chand Publishing, 2001.
4. Kundur P., 'Power System Stability and Control', Tata McGraw Hill Education Pvt. Ltd., New Delhi, 10th reprint, 2010.

EE8551

**MICROPROCESSORS AND MICROCONTROLLERS**

L	T	P	C
3	0	0	3

**OBJECTIVES:**

To impart knowledge on the following Topics

- Architecture of  $\mu$ P8085 &  $\mu$ C 8051
- Addressing modes & instruction set of 8085 & 8051.
- Need & use of Interrupt structure 8085 & 8051.
- Simple applications development with programming 8085 & 8051

**UNIT I 8085 PROCESSOR**

9

Hardware Architecture, pinouts – Functional Building Blocks of Processor – Memory organization – I/O ports and data transfer concepts– Timing Diagram – Interrupts.

**UNIT II PROGRAMMING OF 8085 PROCESSOR**

9

Instruction -format and addressing modes – Assembly language format – Data transfer, data manipulation & control instructions – Programming: Loop structure with counting & Indexing – Look up tability - Subroutine instructions - stack.

**UNIT III 8051 MICRO CONTROLLER**

9

Hardware Architecture, pinouts – Functional Building Blocks of Processor – Memory organization – I/O ports and data transfer concepts– Timing Diagram – Interrupts– Data Transfer, Manipulation, Control Algorithms & I/O instructions, Comparison to Programming concepts with 8085.

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 Anna University  
 No 34, Rajiv Gandhi Salai (OMR)  
 Sipcot - IT Highway Egattur,  
 Chennai - 603103.

**UNIT IV PERIPHERAL INTERFACING** 9  
Study on need, Architecture, configuration and interfacing, with ICs: 8255, 8259, 8254, 8279, - A/D and D/A converters & Interfacing with 8085 & 8051.

**UNIT V MICRO CONTROLLER PROGRAMMING & APPLICATIONS** 9  
Simple programming exercises- key board and display interface –Control of servo motor- stepper motor control- Application to automation systems.

**TOTAL : 45 PERIODS**

**OUTCOMES:**

- Ability to acquire knowledge in Addressing modes & instruction set of 8085 & 8051.
- Ability to need & use of Interrupt structure 8085 & 8051.
- Ability to understand the importance of Interfacing
- Ability to explain the architecture of Microprocessor and Microcontroller.
- Ability to write the assembly language programme.
- Ability to develop the Microprocessor and Microcontroller based applications.

**TEXT BOOKS:**

1. Sunil Mathur & Jeebananda Panda, "Microprocessor and Microcontrollers", PHI Learning Pvt. Ltd, 2016.
2. R.S. Gaonkar, 'Microprocessor Architecture Programming and Application', with 8085, Wiley Eastern Ltd., New Delhi, 2013.
3. Muhammad Ali Mazidi & Janice Gilli Mazidi, R.D.Kinely 'The 8051 Micro Controller and Embedded Systems', PHI Pearson Education, 5th Indian reprint, 2003.

**REFERENCES**

1. Krishna Kant, "Microprocessor and Microcontrollers", Eastern Company Edition, Prentice Hall of India, New Delhi, 2007.
2. B.RAM," Computer Fundamentals Architecture and Organization" New age International Private Limited, Fifth edition, 2017.
3. Soumitra Kumar Mandal, Microprocessor & Microcontroller Architecture, Programming & Interfacing using 8085,8086,8051,McGraw Hill Edu,2013.
4. Ajay V.Deshmukh, 'Microcontroller Theory & Applications', McGraw Hill Edu,2016
5. Douglas V.Hall, 'Microprocessor and Interfacing', McGraw Hill Edu,2016.

**EE8552**

**POWER ELECTRONICS**

**L T P C**  
**3 0 0 3**

**OBJECTIVES:**

To impart knowledge on the following Topics

- Different types of power semiconductor devices and their switching
- Operation, characteristics and performance parameters of controlled rectifiers
- Operation, switching techniques and basics topologies of DC-DC switching regulators.
- Different modulation techniques of pulse width modulated inverters and to understand harmonic reduction methods.
- Operation of AC voltage controller and various configurations.

  
**PRINCIPAL**  
Mohamed Anshak A.J. College of Engineering  
No 34, Rajiv Gandhi Salai (O.M.R)  
Sipcot - IT Highway, Essttur,  
Chennai - 603103.

- Ability to analyze the characteristics and functions of relays and protection schemes.
- Ability to study about the apparatus protection, static and numerical relays.
- Ability to acquire knowledge on functioning of circuit breaker.

**TEXT BOOKS:**

1. Sunil S.Rao, 'Switchgear and Protection', Khanna Publishers, New Delhi, 2008.
2. B.Rabindranath and N.Chander, 'Power System Protection and Switchgear', New Age International (P) Ltd., First Edition 2011.
3. Arun Ingole, 'Switch Gear and Protection' Pearson Education, 2017.

**REFERENCES**

1. BadriRam ,B.H. Vishwakarma, 'Power System Protection and Switchgear', New Age InternationalPvt Ltd Publishers, Second Edition 2011.
2. Y.G.Paithankar and S.R.Bhide, 'Fundamentals of power system protection', Second Edition,Prentice Hall of India Pvt. Ltd., New Delhi, 2010.
3. C.L.Wadhwa, 'Electrical Power Systems', 6th Edition, New Age International (P) Ltd., 2010
4. RavindraP.Singh, 'Switchgear and Power System Protection', PHI Learning Private Ltd., NewDelhi, 2009.
5. VK Metha," Principles of Power Systems" S. Chand, 2005.
6. Bhavesh Bhalja, R.P. Maheshwari, Nilesh G. Chotani,'Protection and Switchgear' Oxford University Press, 2011.

EE8691

**EMBEDDED SYSTEMS**

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**OBJECTIVES:**

To impart knowledge on the following Topics

- Building Blocks of Embedded System
- Various Embedded Development Strategies
- Bus Communication in processors, Input/output interfacing.
- Various processor scheduling algorithms.
- Basics of Real time operating system and example tutorials to discuss on one real time operating system tool.

**UNIT I INTRODUCTION TO EMBEDDED SYSTEMS**

9

Introduction to Embedded Systems –Structural units in Embedded processor , selection of processor & memory devices- DMA – Memory management methods- Timer and Counting devices, Watchdog Timer, Real Time Clock, In circuit emulator, Target Hardware Debugging.

**UNIT II EMBEDDED NETWORKING**

9

Embedded Networking: Introduction, I/O Device Ports & Buses– Serial Bus communication protocols RS232 standard – RS422 – RS 485 - CAN Bus -Serial Peripheral Interface (SPI) Inter Integrated Circuits (I<sup>2</sup>C) –need for device drivers.

**UNIT III EMBEDDED FIRMWARE DEVELOPMENT ENVIRONMENT**

9

Embedded Product Development Life Cycle- objectives, different phases of EDLC, Modelling of EDLC; issues in Hardware-software Co-design, Data Flow Graph, state machine model,

*[Handwritten Signature]*  
**PRINCIPAL**  
 Satyak A.J. College of Engineering  
 Rayiv Gandhi Salai (OMR)  
 Highway Egattur,  
 Chennai - 603 143.

Sequential Program Model, concurrent Model, object oriented Model.

**UNIT IV RTOS BASED EMBEDDED SYSTEM DESIGN 9**

Introduction to basic concepts of RTOS- Task, process & threads, interrupt routines in RTOS, **Multiprocessing and Multitasking**, Preemptive and non-preemptive scheduling, Task communication shared memory, message passing-, Inter process Communication – synchronization between processes-semaphores, Mailbox, pipes, priority inversion, priority inheritance.

**UNIT V EMBEDDED SYSTEM APPLICATION AND DEVELOPMENT 9**

**Case Study** of Washing Machine- Automotive Application- Smart card System Application-ATM machine –Digital camera

**TOTAL : 45 PERIODS**

**OUTCOMES:**

- Ability to understand and analyze Embedded systems.
- Ability to suggest an embedded system for a given application.
- Ability to operate various Embedded Development Strategies
- Ability to study about the bus Communication in processors.
- Ability to acquire knowledge on various processor scheduling algorithms.
- Ability to understand basics of Real time operating system.

**TEXT BOOKS:**

1. Peckol, "Embedded system Design", John Wiley & Sons,2010
2. Lyla B Das," Embedded Systems-An Integrated Approach", Pearson, 2013
3. Shibu. K.V, "Introduction to Embedded Systems", 2e, Mc graw Hill, 2017.

**REFERENCES**

1. Raj Kamal, 'Embedded System-Architecture, Programming, Design', Mc Graw Hill, 2013.
2. C.R.Sarma, "Embedded Systems Engineering", University Press (India) Pvt. Ltd, 2013.
3. Tammy Noergaard, "Embedded Systems Architecture", Elsevier, 2006.
4. Han-Way Huang, "Embedded system Design Using C8051", Cengage Learning, 2009.
5. Rajib Mall "Real-Time systems Theory and Practice" Pearson Education, 2007.

**EE8661 POWER ELECTRONICS AND DRIVES LABORATORY L T P C**  
**0 0 4 2**

**OBJECTIVES:**

- To provide hands on experience with power electronic converters and testing.

**LIST OF EXPERIMENTS**

- 1 Gate Pulse Generation using R, RC and UJT.
- 2 Characteristics of SCR and TRIAC
- 3 Characteristics of MOSFET and IGBT
- 4 AC to DC half controlled converter
- 5 AC to DC fully controlled Converter
- 6 Step down and step up MOSFET based choppers
- 7 IGBT based single phase PWM inverter

**PRINCIPAL**  
Mohamed Sathak A.J. College of Engineering  
Raily Gandhi Salai (O.P.R.T.)  
Sriperumbudur, Tamil Nadu  
601 319