SPECTRUM 22-23

NARASARAOPETA
NEC ENGINEERING COLLEGE
(AUTONOMOUS)

Editorial Board

Faculty Members:

Dr. V. VenkataRao, Professor & HOD, ECE

Mr. J. V. K. Ratnam, Professor, ECE

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Mr. J. NarasimhaRao, Associate Professor, ECE

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Mr. K. Sreekanth Reddy, III Year

Miss.K.V.Vijaya Lakshmi, II Year

Mr.M.Samba Siva Rao ,II Year

MESSAGES

Chairman's message

It gives me great happiness to note that the department of Electronics and Communication Engineering, NEC is bringing out the volume-13 of the department technical magazine, "SPECTRUM". From the first edition, I understand that this magazine is intended to bring out the hidden literary talents in the students and also to inculcate leadership skills among them. The newsletter has served as a platform for the students to share their knowledge and ideas. I expect the contributions to this magazine to be of high standard and quality. I wish all the success for this venture.

Vice Chairman's message

I feel extremely delighted to observe that the department of ECE is coming out with a magazine this year also with the dedicated and committed efforts of the faculty and the students of the Editorial Board. The activity depicts the commitment and involvement of students and their thirst for knowledge.

I congratulate the efforts of the members of the Editorial Board in bringing out the volume-13 of the magazine. It is because of their selfless and untiring efforts that we see the magazine enriched with variety of articles.

Principal's message

The magazine of the department is the reflection of the creativity of the students, involved in multifarious activities. It speaks about their imaginative creativity through the medium of a language given in literary and artistic shape.

I feel gratified to see that the department is doing its best in carrying out the mission of grooming the students as such professionals who are not only competent enough to combat the challenges in their life but also become good human beings with moral excellence and social sensitivity

HOD's message

I feel privileged in presenting the volume-13 of our department association magazine. I would like to place my sincere and heartfelt thanks to all those who have contributed to make this effort a success. My special thanks to the Management, for their guidance which enabled us to bring out this volume.

The magazine has a variety of articles endowed with different subjects contributed by the students of our department and their participation in various activities round the year.

I extend my gratitude to the entire team of the Editorial Board for their constant exertion, revision and support in bringing out the magazine in present form.

INDEX

SMART JACKET FOR SOCIAL DISTANCING

We all faced a situation that we never imagined during 2020 to 2021 when COVID19 swept across many parts of the country. In those days it was inevitable to maintain minimum physical distance of two meters between any two persons even among family members also. Keeping this problem into consideration in this article we propose a smart jacket that alerts you whenever distance falls below minimum distance specified between you and people surrounding you.

The device is built using Aurdino Uno Board1,three HC-SR04 ultrasonic sensors and a piezo- electric buzzer. The three sensors are used to detect the distance from back,left and right sides of the user. Whenever a person approaches the user with in a distance of 50cms the piezo-electric buzzer makes a sound to alert the user .The Aurdino board can be fixed at the back-side of the jacket along with the buzzer. The three ultra-sonic sensors are placed on right arm ,left arm and back of the jacket respectively. A 9V PP3 battery with 2.1mm DC power plug can be used to supply power.


Back sensor

Arduino Board with Inbuilt LED

THOUGHT CONTROLLED LIGHTS

   The idea of switching on or off a light at your home without any physical movement of ay part of your body .Can you imagine this other than a Hollywood movie. Yes that is possible now.

We know that our brain generates electric signals whenever we are active and we are doing some activity or thinking some thing serious. These electric signals are called as Electro-Encephelo Gram i.e EEG Signals. In this project we get brain signals to control lights.The device works with the help of IOT and EEG signal sensors.In this project a NeuroSky Mind wave Mobile2 EEG sensor is used.Rasphberry Pi is the controller used . The sensor and controller are paired with Bluetooth. Python module Neuropy is used to retrieve data the data from the sensor.

Once the sensor is paired with Rasphberry Pi we can read the data generated by various brain signals depending on your activity like attention,meditation and eyeblink. The input data is classified into groups like alpha waves, beta waves, gamma waves and so on.Once data read crosses pre-set threshold value of 80 the desired electric device like a fan or light can be switched on.
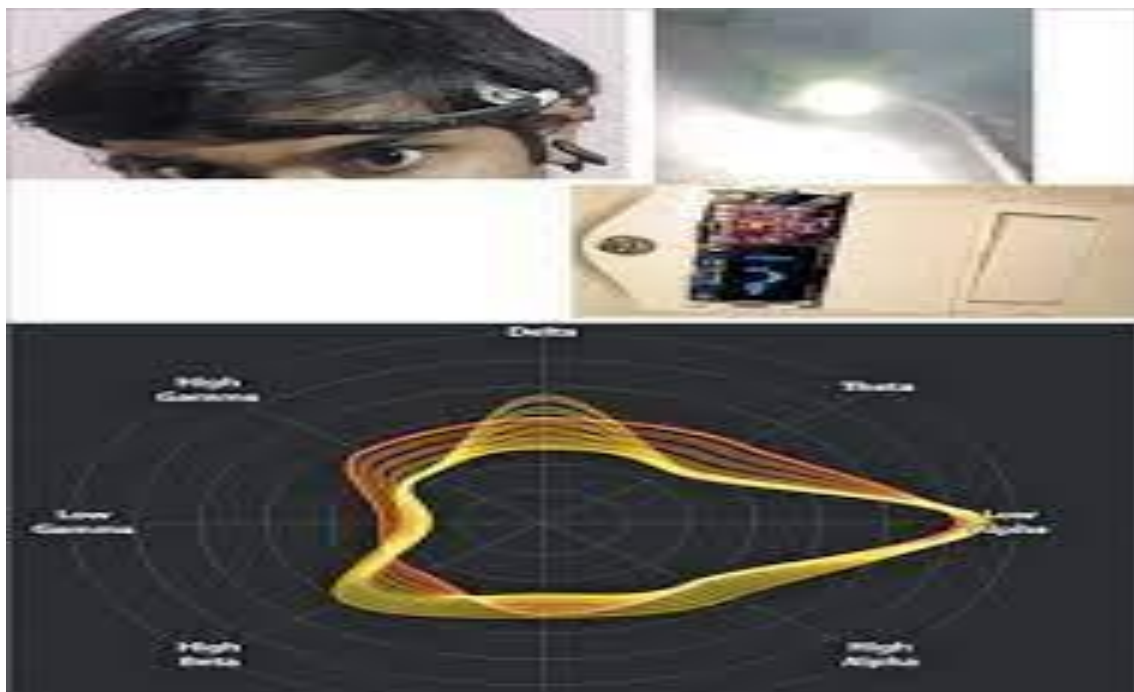
THERMAL CAMERA USING YOUR PHONE

Thermal scanning of body to know the temperature played a vital role during COVID19 days. These thermal cameras also used in various industries for fault detection , monitoring etc. Normally standard thermal scanners are costly and not affordable to common man. In this article we propose a simple method to use smart phone as a thermal scanner.

In this a thermal sensor AMG8833 and Rasphberry Pi are interfaced together. First a case to hold the thermal sensor is made and a small hole is cut so that it can read the reflections from target through this hole.OTG can also be used to connect the phone to the device.After connecting the OTG and sensor with R-Pi the I2C peripheral of R-Pi is enabled. Poper connections need to be checked before running the module. Now connect the R-Pi to phone via hot-spot or Wifi. Read the data after installing suitable libraries like pygame, scipy,numpy etc. Set the maximum ad minimum limits of temperature for operation. The data read by thermal camera is a 8x8 matrix that is mapped to red,green,blue and yellow colors to represent various temperature ranges of the obtained image. A VNC viewer is installed on Phone to view the thermal image.

HEALTH MONITORING RING

Imagine a situation where a woman away from home and she is pregnant. She needs regular visits to hospital but doctor advised bed rest. As she is alone it is very tougg task for her to visit hospital at regular intervals. If there is a device that can send her basic health parameters to the hospital remotely it is big advantage for that woman . Right. Now we are proposing a device called health ring that monitors important parameters like pulse rate, temperature etc and sends to the hospital by using IOT.

In this project a pulse oximeter sensor MAX30100 and NodeMCU are used along with Things speak, which is the cloud provider for IoT.

First read the data from public ThingSpeak channel 12397 and write it to new channel .Once channel settings are done as per the requirement of user regarding to allow private view or public view   data can be uploaded in any of the three formats like,xtml, .csv or Jason. To run the module first set the Things Speak channel as mentioned above and read the sensor data. A USB cable is used to connect the Aurdino board and Laptop. Once the code is uploaded we can see health data in real time from any device and anywhere.
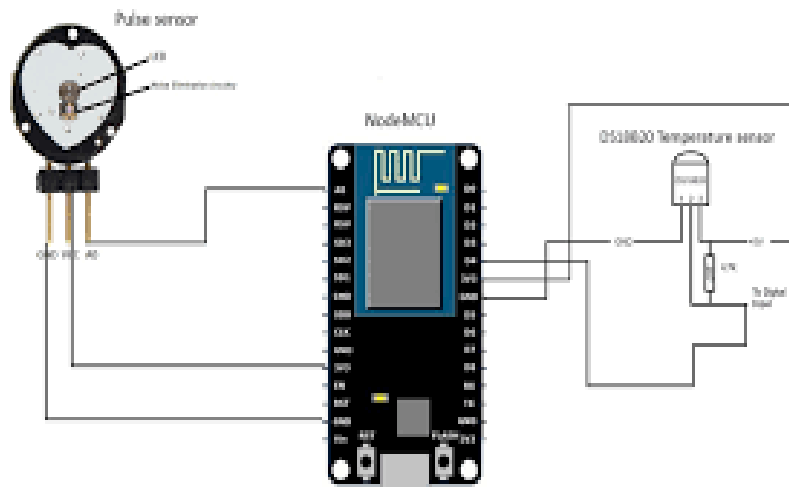
SMART GLASSES

We know that Google Glass is revolutionary invention that allows user to read books , check news etc in addition to normal usage like ordinary pair of glasses to see surroundings. But it is really expensive. In this article we introduce a similar idea called "Smart Glass" that is used to see information sent like a SMS on OLED display. In this Rasphberry Pi is interfaced with a transparent OLED display .

In this module a reference design to display time and text information is given. Once pin connections are made the code is written in Python. Initially all the necessary library modules like datetime,logging, time etc are imported. Once the kit is powered on information like current date, time etc is displayed on OLED.The information is displayed as an overlay or an image floating in air.

HANDHELD ECG MONITORING SYSTEM

Whenever a doubt on the condition of heart arises about the condition of heart the first and foremost test prescribed by a doctor is to record the ECG i.e Electro CardioGram. In this article a low-cost real-time ECG recorder is proposed. Here Aurdino Uno is interfaced with a AD8232 sensor and a 3M ECG adhesive type electrode.

To obtain ECG normally standard ECG electrodes are connected at three vital points on the body of patient.Here the most commonly used single-lead configuration is used. The right type of electrodes last for a long time and assist in recording high-quality signals. These low-cost electrodes are made of Ag-Ag Cl and surrounded by a gel with a resistivity about 100 Ohm-m.

When Aurdino is powered on serial data is received from sensor at 9600 bauds by Aurdino and sent to Laptop. A serial plotter is connected to pins 9 and 10 of Aurdino and a buzzer is also connected to pin11. Whenever signal strength is above 590 micro volts the buzzer sounds to alert and indicate hyperactivity in heart.
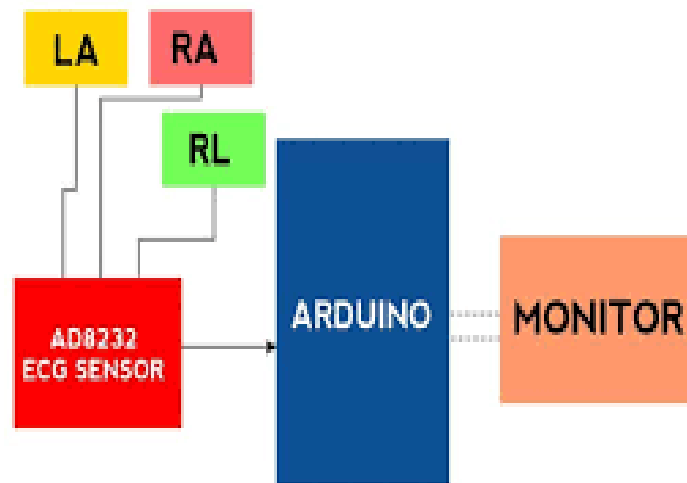

Dr.V.Venkata Rao
HoD

Fitness Tracking Watch

Now a days awareness abot health and fitness levels is very good and public is eager to know about pulse rate, oxygen level, number of steps taken over a specified time. Many smart watches are available for this purpose however here we propose a simple low-cost design. This fitness tracker is built around SMO Wi-fi SoC chip,SpO2 and hear sensor along with some other components.

Once all connections are over download suitable library file for Aurdino. We need NTP client to get time for Wi-fi network. Setup free pin on ESPCH1. The I2C communication is established between MAX30100 sensor and SPI via NTP server.Now upload the code to ESP12F chip by setting right board and right port number. Finally the chip needs to be connected to FTDI programmer and in few seconds it will fetch the information regarding current date besides health data received.

Dr.J.V.K.Ratnam
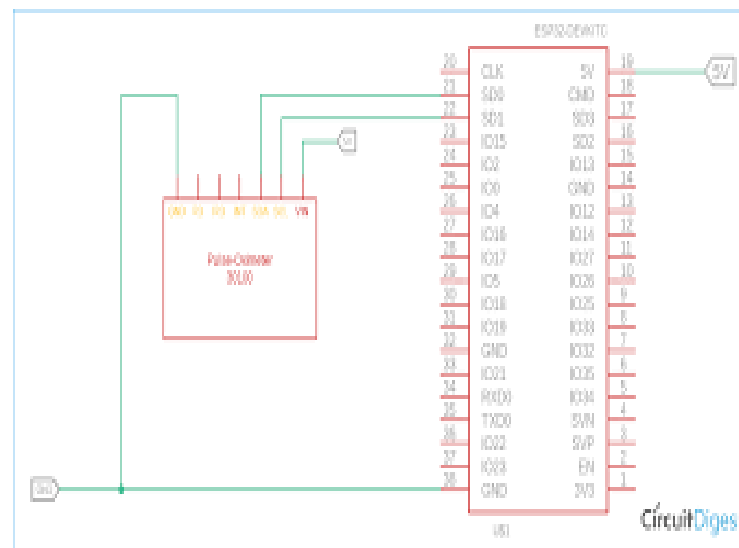
WORKSHOP DETAILS

Sl.no	Name of the FDP/STTP/Workshop/Guest lecture	Name of the Resource person and Organization	Name of the Coordinator	Dates	No. of Participants	
1	Alumni interaction	P. Sai Varshini (16471A04A0) , project Engineer in Wipro	Mr. P. Bhagya Raju	18-07-2022	120	
2	Alumni interaction	K.Nancy Sushma (16471A0488), project Engineer in Wipro	Mr. P. Bhagya Raju	18-07-2022	128	
3	International Conference on Advances in Signal Processing and Communications (NEC-ICASPC-2K22)	.Dr. Ruchi Doshi, Associate professor and Reasearch supervisor UNIVERS EIDAD AZTECA,Mexico Dr. Anil Kumar Vuppala , Associate professor, IIIT,Gachibowli, Hyderabad.	Mr. Amit Gupta	29-7-2022 and 30-7-2022	62	62
4	Guest lecture on " Hakathons and Intenships"	Mr. Ganesh Nagi Doddi-Founder & CEO,Brain O Vision Solutions India Pvt.Ltd..	Dr. V. Venkata Rao	08-08-2022	III-ECE students	
5	One Week Faculty Development Program (FDP) on "Advanced VLSI System Design & Challenges"	1. Dr. Ch. Srinivasa Rao, Professor & Principal JNTUK UCEN, Narasaraopet, AP. 2. Dr. Ramesh Vaddi, Assoc. Prof. &Head, Dept, of ECE, SRM University	Dr. V. Venkata Rao	22-8-2022 to 26-8-2022	70	

		AP. And others			
6	Webinar on "Build Self Confidence"	Ms. Sita Ravinutala, Communication and Transition Coach, Doctorite , WINCIBL.	Dr. V. Venkata Rao	13/09/2022.	70
7	Webinar on "The State of Women in Engineering",	Dr. Abha Dargar, Member of IEEE WIE, Asst. Professor, Dept. of ECE, Kalasalingam Academy of Research & Foundation, Tamilnadu.	Dr. V. Venkata Rao	15-09-2022	90
8	One Week Faculty Development Programme on" VLSI Devices and Circuits for AI applications(ICT-122)"	1. Dr. S S Gill, NITTTR Chd 2.Dr. K. Srinivasa Rao, KL University AP 3.Dr Santosh, Kumar IIT Indore And others	Mr. A. Ravindra Babu	19/09/2022 to 24/09/2022	38
9	Seminar on "Career Opportunities after B.Tech"	Mr. M. Ramesh, Senior Faculty Member at ACE Engineering Academy.	Dr. V. Venkata Rao	22-09-2022	117
10	Seminar on "Career Opportunities after B.Tech"	Mr. M. Ramesh, Senior Faculty Member at ACE Engineering Academy.	Dr. V. Venkata Rao	24-09-2022	124

11	Two days' Workshop on" Developing IoT applications(Hands-on Training)"	1. Dr. Y.Mohammed Sirajuddin, Assistant Professor, VIT-AP, Amaravathi, Guntur. 2. Prajwal Y. Moredukonda, Assistant Professor, Dept. of CSE, Vardhaman College of Engineering, Hyderabad.	Dr. V. Venkata Rao	26/09/2022 to 27/09/2022	219
12	Webinar on "Cyber Security Awareness programme"	JNTUK Team	Dr. V. Venkata Rao	14-10-2022	70
13	A seminar on " IoT Drone Applications"	Dr. A. V. Nageswara Rao, Department of ECE, Narasaraopeta Engineering College (Autonomous), AP	Dr. V. Venkata Rao	21-10-2022	70
14	Interaction program on "Application Development Services"	Alumni Mr. Sompalli Hari krishna (15471A04J7) Software Developer, Company: Technical Integration Technologies	Mr. P. Bhagya Raju	22-10-2022	70
15	Interaction program on "career guidance"	Alumni Mr. Teja Daggubati (13471A04E1) Technical Analyst, Company: Infosys	Mr. P. Bhagya Raju	29-10-2022	55

1. One Week Faculty Development Program (FDP) on "Advanced VLSI System Design & Challenges" conducted from 22/08/2022 to 26/08/2022.

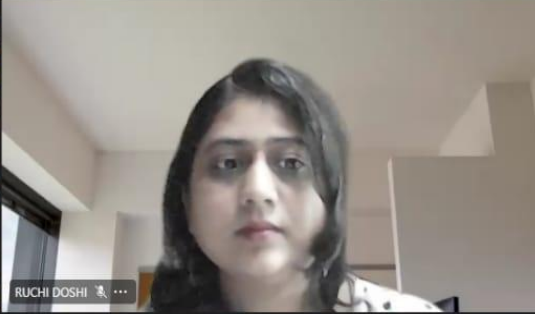1. International Conference on "Advances in Signal Processing and Communications (NEC-ICASPC-2K22)", Key note speakers: 1.Dr. Ruchi Doshi, Associate professor and researche supervisor, UNIVERSEIDAD, AZTECA, mexico.2.Dr. Anil Kumar Vuppala, Associate professor, IIIT, gachibowli, Hyderabad on 29-7-2022 & 30-7-2022 and organized by Department of Electronics and Communication Engineering Narasaraopeta Engineering College (AUTONOMOUS) Narasaraopet, A.P, India.

NEC-ICASPC-2K22 Keynote Address by Dr. Ruchi Doshi, Universidad Azteca , Chalco Mexico

1. Guest lecture on " Hakathons and Intenships", Resource person: Mr. Ganesh Nagi Doddi-Founder & CEO,Brain O Vision Solutions India Pvt.Ltd.., conducted on 08-08-2022, participants: III-ECE students.

Guntur, Andhra Pradesh, India
NEC Block 2, Kotappakonda Rd, Andhra Pradesh 522611, India
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Long 80.055636°
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STUDENT TOPPERS

NARASARAOPETA ENGINEERING COLLEGE (AUTONOMOUS)

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

I B.Tech. I Semester, ECE Toppers List (2022 Batch)

R. B.P.UMADEVI 22471A0446 9.23	J.BHAVANI 22471A0420 9.08	K.G.V.N. TRIVENI 22471A0429 9.08	V.HARI PRASAD 22471A04D8 8.85	G.KAVYA SUDHA 22471A0488 8.77	M.V.N.M.S.S.NAVYA 22471A04A7 8.77
D.VENKATA LAKSHMI 22471A04F5 8.77	A.YASASWI 22471A0471 8.62	B.BHARGAV 22471A0479 8.62	P.L.PRANATHI 21471A04B2 8.62	SK.MAJUNU 22471A04C3 8.62	SK.SHAILU 22471A04J9 8.62

Management, Principal, HOD & Faculty Express their Hearty Congratulations to Toppers in I B.Tech I Sem

NARASARAOPETA ENGINEERING COLLEGE (AUTONOMOUS)

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

II B.Tech. I Semester, ECE Toppers List (2021 Batch)

D.JASWANTH 21471A04C9 9.3	K.PHANI KUMAR 21471A04D6 9.23	K.SAI TANUJA 21471A04E1 9.23	A.RAMA TULASI 21471A0462 9.16	K.V.VIJAYA LAKSHMI 21471A04D8 9.16
Y.NAVYA SRI 21471A04M2 9.16	P.DURGA PRASAD 21471A04L1 9.09	G.CHAITANYA PRIYA 21471A04I9 9.02	S.KRISHNA VENI 21471A04J7 9.02	P.ASWINI 21471A04L0 9.02

Management, Principal, HOD & Faculty Express their Hearty Congratulations to Toppers in II B.Tech I Sem

NARASARAOPETA ENGINEERING COLLEGE (AUTONOMOUS)

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

III B.Tech. II Semester, ECE Toppers List (2020 Batch)

Name	Roll No	CGPA
M.SUBHASRI	20471A0 4F8	9.44
K.SANDHYA	20471A04J5	9.37
K.SWATHI	20471A04J2	9.35
K.V.RAMYA SRI	20471A04F1	9.21
M.YAMUNA	20471A0434	9.02
G.MOUNIKA	20471A04D9	9.02
B.SIVA LATHA	20471A04I4	9.02
K.KOUSALYA	20471A04J3	9.02
M.SIVA RAJU	20471A04F7	8.93
V. SRI LAKSHMI	20471A04H7	8.88
P. DIVYANAYANA	20471A04K3	8.88

Management, Principal, HoD & faculty Express their Hearty Congratulations to Toppers in III B.Tech. II Sem.

NARASARAOPETA ENGINEERING COLLEGE (AUTONOMOUS)

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

IV B.Tech. II Semester, ECE Toppers List (2019 Batch)

Name	Roll No	CGPA
G.S.R.KRISHNA REDDY	19471A04E0	10
V.GOUTHAMI	19471A04H9	10
CH.V.S.NAVEEN KUMAR	19471A0405	9.77
SK.MUSARATH FARHANA	19471A04A8	9.77
B.YOGA ALEKHYA	19471A04C9	9.77
SK.RESHMA	19471A04H5	9.77
T.NIHARIKA	20475A0419	9.77
V.ARUN KUMAR	18471A04M0	9.54
CH.NIKHITHESWARI	19471A0406	9.54
CH.SRINIVASA RAO	19471A0407	9.54

Management, Principal, HoD & faculty Express their Hearty Congratulations to Toppers in IV B.Tech. II Sem.

NPTEL CERTIFICATION DETAILS

S.NO	Name of the Course	Duration	Number of Students Completed	Class
1	IOT,Robotics and Hacking with NodeMCU	July-Oct 2022	50	III-I ECE
2	Python for data science	Jul-Aug 2022	3	III-I ECE
3	Analog Communication	Jul-Oct-2022	6	II-I ECE
4	Introduction to Internet of things	Jan-Apr-2022	54	III-II ECE
5	Microprocessors and Interfacing	Jan-Apr-2022	31	III-II ECE

List of Industries/ academic institutions with which the Institute has entered into Memorandum of Understanding (MOUs) for the department of ECE.

S. No.	Name and Address of Organization	Date of MoU	Period	Nature of MOU
1	Byte^{XL} India Pvt. Ltd., Hyderabad 500032	16-10-2020	3 years	Skill Development Programs
2	Vectra Technosoft Pvt. Ltd, CHENNAI, Tamil Nadu	30-08-2021	3 years	Industrial Training & Visits, Internship & Placements to students, R&D, Guest Lectures, FDPs, Skill Development
3	AGIIT (AXIS Global Institute of Industrial Training . Hyderabad	30-08-2021	3 years	Skill Development Programs
4	Falcon IT Training & Educational Services LLP, Hyderabad	30-08-2021	3 years	R&D, FDPs
5	Lineysha & Thevan Software Technologies Pvt Ltd,Vijayawada	24-11-2021	2 years	Organize Training Programs, seminars, workshops and Conferences
6	AVODHA Edutech Pvt Ltd, Banglore.	29-11-2021	2 years	Organizing Training Programs, Conferences
7	Edu Skills National Building Through Skills	24-11-2022	5 years	Skill Development Programs and Training Programs-
8	LEO Global Overseas Educational Consultancy	24-02-2023	3 years	Industry Training, Guest Lectures and Placement and training and Technical resource support
9	Ve-Educare	17-04-2023	3 years	Organize Training Programs, seminars,
10	Celonis SE	27-04-2023	2 years	To cooperate in the academic area for technology and trainings for sharing technology useful in academic activities

Sample copies -MOUs

MEMORANDUM OF UNDERSTANDING

(MoU)

BETWEEN

ExcelR Solutions

Narasaraopeta Engineering College, Narasaraopet, Guntur

FOR

CLAUSE 4   RELATIONSHIP BETWEEN THE PARTIES

5.1 It is expressly agreed that First Party and Second Party are acting under this MOU as independent contractors, and the relationship established under this MOU shall not be construed as a partnership.

FirstParty

Principal

PRINCIPAL
NARASARAOPETA ENGINEERING COLLEGE
(AUTONOMOUS)
NARASARAOPET - 522 601
Guntur (Dist.), A.P.

Second Party

(V. LAKSHMI KANTH)
Director

LEO GLOBAL OVERSEAS EDUCATIONAL CONSULTANCY

Vijaya Complex, Opp. Vijetha Super Market, 5th Lane Brindavan Gardens, Guntur - 522006.
Guntur - 8519955599, 8519855999, Ph : 0863-2255959

MEMORANDUM OF UNDERSTANDING (MOU)

BETWEEN

NARASARAOPETA ENGINEERING COLLEGE (AUTONOMOUS)

AND

LEO GLOBAL OVERSEAS EDUCATIONAL CONSULTANCY

This Memorandum of Understanding (herein after called as the 'MoU') is entered into on this the 24th day of FEB 2023 by and between **Narasaraopeta Engineering College (Autonomous),** the First Party represented herein by its Principal, **Dr. M. Sreenivasa Kumar**

And

LEO Global Overseas Educational Consultancy, the second party and represented herein by its Director, **Dr. Veeranjaneyulu Lagadapati (Managing Director).**
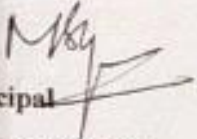
WHEREAS:

A) First Party is a Higher Educational Institution named: **Narasaraopeta Engineering College (Autonomous).**

B) First Party & Second Party believe that collaboration and co-operation between themselves will promote more effective use of each of their resources, and provide each of them with enhanced opportunities.

C) The Parties intent to cooperate and focus their efforts on cooperation within area of Skill Based Training, Education, Placement, Industrial Visit, Expert Lecture.

D) **LEO Global Overseas Educational Consultancy** - the Second Party is engaged in providing overseas career consultancy and placement services.

CLAUSE 4   RELATIONSHIP BETWEEN THE PARTIES

5.1 It is expressly agreed that First Party and Second Party are acting under this MOU as independent contractors, and the relationship established under this MOU shall not be construed as a partnership.

Narasaraopeta Engineering college

Principal

PRINCIPAL
ARAOPETA ENGINEERING COLLEGE
(AUTONOMOUS)
RASARAOPET - 522 601
Guntur (Dist.), A.P.

Vectra Technosoft Pvt Ltd

Director
Ranjit Sengupta

VECTRA TECHNOSOFT PRIVATE LIMITED

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