



VEMU INSTITUTE OF TECHNOLOGY

P.Kothakota, Chittoor District -517112

**A one week
FDP
on
“Industrial IoT using
LoRa WAN Technology”
01.06.20 to 05.06.20**

**A one week Faculty Development
Program on
"Industrial IoT using LoRa WAN
Technology"**

LoRa

From 1st – 5th June 2020



Organized by
Dept. of E. C. E
(As a part of MOU Activity)



**VEMU INSTITUTE OF TECHNOLOGY
(VEMU IT)**

P. Kothakota, Tirupati – Chittoor Highway,
Chittoor District, Andhra Pradesh – 517112.
www.vemu.org

In Association with



APPLY VOLT, Vijayavada

#40-6/3-3, Sri Nilayam, 3rd Floor,
Co-Operative Bank Colony, Moghalrajapuram,
Pin Code: 520 010, Andhra Pradesh, India.
www.applyvolt.com

CHIEF PATRON:

Prof. K. Chandra Sekhar Naidu,
Chairman, VEMU IT.

PATRON:

Dr. K.Naveen Kilari, Principal, VEMU IT.

CONVENER:

Dr. S. Muni Rathnam, HOD-ECE, VEMU IT.

COORDINATORS:

- 1) **Dr.G.Elairaja** Prof. in ECE, VEMU IT.
- 2) **Mr. G. Srihari** (Ph.D), Assoc. Prof. in ECE, VEMU IT.

ORGANIZING COMMITTEE:

- 1) Dr. S. Arun, Professor
- 2) Dr. S. Murali Mohan, Professor
- 3) Dr. A. Pulla Reddy, Assoc. Professor
- 4) Mrs. C. Geetha, (Ph.D), Assoc. Professor
- 5) Mrs. B. Saroja, (Ph.D), Assoc. Professor
- 6) Mr. R. Mallikarjuna Reddy, (Ph.D), Assoc. Prof.
- 7) Mr. G. Sankarappa, M.Tech., Assoc. Professor
- 8) Mr. Y. Mahesh, M.Tech., Assoc. Professor
- 9) Mrs. R. Rani, M.Tech., Assoc. Professor
- 10) Mrs. K. Jaya Sree M.Tech., Assoc. Professor
- 11) Mr. N. Kiran Kumar, M.Tech., Assoc. Professor
- 12) Mr. P.H. Chandra Mouli, M.Tech., Asst. Professor
- 13) Mr. M.Arun Kumar, M.Tech., Assistant Professor
- 14) Mr. M. Thulasi Ram, M.Tech., Assistant Professor
- 15) Mr. G. Siva Koteswara Rao, M.Tech., Asst. Prof.
- 16) Ms. V. Bharathi, M.Tech., Asst. Professor
- 17) Mrs. S.Chandana, M.Tech., Assistant Professor
- 18) Mrs. D.Reena, M.Tech., Assistant Professor
- 19) Mrs. J.V.Pesha, M.Tech., Assistant Professor
- 20) Mrs. M.Bhargavi, M.Tech., Assistant Professor
- 21) Mr. P.Vemaiah, M.Tech., Assistant Professor
- 22) Mrs. P.Sirisha, M.Tech., Assistant Professor
- 23) Mrs. M.J.Chithraja, M.Tech, Assistant Professor
- 24) Mr. K.Guraiah, M.Tech, Assistant Professor
- 25) Mr. G.Mala Kondaiah, M.Tech, Assistant Prof.
- 26) Mr. B.Praveen Kumar, M.Tech, Assistant Prof.
- 27) Mr. D.Mohan Reddy, M.Tech, Assistant Professor
- 28) Mr. N.Gangadharam, M.Tech, Assistant Prof.
- 29) Mr. V.Umamaheshwar Rao, M.Tech, Asst. Prof.

30) Mrs. A. Kusuma Kumar, M.Tech, Asst. Prof.

31) Mrs. V.Lakshmi Lavanya, M.Tech, Assistant Prof.

ABOUT VEMU IT:

VEMU Institute of Technology (VEMU IT) is one of the best and finest engineering colleges in Chittoor District, Andhra Pradesh. Beginning its quality inputs in 2008, it has attained ISO 2015:9001 certification for quality management within a short span of time. The institution's progress and contribution to the field of technical education for over one decade and accredited by NAAC in the year 2017, Recognized under 2(F) and 12(B) UGC Act, Permanent Affiliation with JNTUA (Anantapuramu), It is located in P. Kothakota, near to Tirupati on the Chittoor Highway in a beautiful 16-acre campus. A diverse, talented community united by a passion for learning and quest for more, VEMUIT challenges its students to make a difference on its campus, in the region, and in the companies where ever they join. With unmatched results in every sphere of education, its commitment to be the best has grown to transform its departments into Centers of Excellence.

INDUSTRY SUPPORTED LABS:

With the support of the industry, VEMU Institute of Technology established the following laboratories in the college for the benefit of students to get trained in the emerging technologies.

- Dassault's 3D Experience Centre
- AP CM's Skill Excellence Center
- YMTS Innovation Centre
- Pavan Empower Solutions Lab
- Industrial IoT Lab
- Transformer Testing and manufacturing Lab
- Cloud Computing and Cyber Security Labs
- e-Yantra Robotics Lab

Features:

- MOUs with industries for internship, Training and projects viz. UI Path, RAVANDS, SNAM Alloys, CODE TANTRA, Young Minds Technology solutions, SR Unique solutions, Sigma Controls etc.
- MHRD - Institution's Innovation Council (IIC) has been established and actively functioning
- Certification courses by foreign universities

Other features:

- Promotion of industry-institution interaction exchange programs.
- Regular seminars, workshops and guest lectures by eminent Professors from Universities and Industry
- Training for Placements right from 1st year
- Special focus on Communication skills, analytical skills and technical skills
- Entrepreneurship Development Cell to make the students entrepreneurs
- R & D cell to inculcate the quest of research in students
- In-Plant Training and Internship arrangement for students
- Counseling by senior faculty members.
- Management headed by a retired and accomplished Professor
- Cultural and sports forums to encourage extracurricular activities
- Classrooms are spacious and well-furnished and provided with Audio-Visual teaching aids and the laboratories are equipped beyond the curriculum requirements
- Exposure for students to the recent trends in technology through innovative teaching learning methods
- Merit Scholarships of 10,000 / 5,000 for all those merit students who secure more than 85% / 80% marks in every year

ABOUT THE DEPARTMENT:

➤ The department offers B. Tech. in Electronics & Communication Engineering, and M. Tech in VLSI Design and Embedded System. The department has highly qualified faculty members, state of art laboratories and infrastructure. Continuing Education programs and customized training/workshops are being organized by industry personnel on regular basis. Students of the department are actively involved in various Co-curricular & extracurricular activities and extension activities as a part of student's association (ELITES) activities. Both ECE Students and Faculties are having memberships in IETE, ISTE, IEEE etc., The Department has a full-fledged departmental library.

ABOUT APPLY VOLT:

Apply Volt (AV) is formed by a group of young professionals, AV team understands the current trends and emerging technologies. Over the year with lot of enthusiasm dynamics it grown faster than targeted. The team has supported customers in terms of Product development, Consultancy, and Training. AV supports customers through innovative technology solutions built around VLSI, PCB, IoT, AI, ML, DSP and Product engineering services. AV is "Next Generation" Technology firm driven by young entrepreneurs who are passionate about make in india.

AV is hub for industrial and Academic Professionals to gain knowledge on latest technologies and meet the industry expectations. All training/Internships programs are designed by industry experts mainly focuses on hands on experience to the participants. As an agile and "Team First" concept hence whole program designed to work as a team which enables the whole program as an "Interact Learn". AV motto is to make participants technology know how the person with lots of Hands on session and practical exposure to real time problems and its solutions.

AV's Solutions in Academics:

- VLSI/FPGA Lab
- DSP Design Lab
- PCB Prototyping Lab
- AI/ML Lab using Nvidia Solutions
- General Purpose Instruments for research
- Online Courses/FDPs/Workshops/Internships

RESOURCE PERSON:

Sri. Karthikeyan S, Senior Technical Engineer

Apply Volt, Vijayavada

COURSE OUTLINE:

- Internet of Things using STM32 ARM cortex M0+ and Embedded C
- Internet of Things using Arduino and Embedded C
- Internet of Things using Raspberry pi and Python
- LoRa Wireless Communication
- BLE Wireless Communication
- Machine Learning with Python

Registration Link:

<https://forms.gle/FnF9a1WNZpv21xbMA>

GUIDELINES:

- ✓ **No Participation fee will be collected**
- ✓ **Maximum no. of participants limited to 100 only**
- ✓ Participants will be selected on first come first serve and will be intimated through the e-mail only
- ✓ e-Participation certificate will be provided through e-mail only.
- ✓ **100% attendance is mandatory to issue e-Certificate.**

FOR MORE DETAILS CONTACT:

vemuecefdp@gmail.com

73829 94930 & 80084 41183



VEMU INSTITUTE OF TECHNOLOGY

P.KOTHAKOTA, PUTHALAPATTU (M), CHITTOOR DIST - 517 112

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

*A 1-week Faculty Development Program on
"Industrial IoT using LoRa WAN Technology"*

In Association with

Apply Volt, Vijayavada/Hyderabad

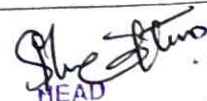
(As a part of MOU Activity)

RESOURCE PERSON:

Sri. Karthikeyan S, Senior Technical Engineer

Schedule

S.No.	Date	Time	Topics to be Covered
1.	01.06.2020	(11 AM - 01 PM)	<ul style="list-style-type: none">• Introduction to Embedded Systems• Basics of Arduino Hardware• Arduino Programming using IDE• Simulation of Sensor Integration with Arduino• Simulation of Actuator with Arduino
2.	02.06.2020	(11 AM - 01 PM)	<ul style="list-style-type: none">• Difference between Embedded Systems and IoT• Introduction to IoT• Comparing different wireless technology for IoT• Key role of LoRa in IoT• Application of LoRa
3.	03.06.2020	(11 AM - 01 PM)	<ul style="list-style-type: none">• How to Configure LoRaWAN Gateway• Introduction MQTT Protocol• Uplink of Sensor data using MQTT Protocol to Application Server• Downlink data from Application Server to End Node
4.	04.06.2020	(11 AM - 01 PM)	<ul style="list-style-type: none">• Introduction to Network Server• Gateway Registration with Network Server• Application creation in Network Registration• Sending Data from End Node to Network Server using ABP Mode
5.	05.06.2020	(11 AM - 01 PM)	<ul style="list-style-type: none">• Application Server Registration• Dashboard creation• Widgets creation for realtime data• Downlink Data from Application Page to End Device using exact Data• SMS/ Email/ Call Alert for Emergency Notification System


HEAD

DEPARTMENT OF ECE
VEMU INSTITUTE OF TECHNOLOGY
P. KOTHAKOTA - 517 112



VEMU INSTITUTE OF TECHNOLOGY

P.Kothakota, Tirupati – Chittoor Highway, Chittoor District, Andhra Pradesh – 517112.

www.vemu.org

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

FDP On "IIOT Using LoRa Technology" Organized by
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING. Attendees

Details		Attendance Sheet				
S No	NAME OF FACULTY	6/1/2020	6/2/2020	6/3/2020	6/4/2020	6/5/2020
1	Dr. S. Muni Rathnam	√	√	√	√	√
2	Dr. S. Arun	√	√	√	√	√
3	Dr. S. Murali Mohan	√	√	√	√	√
4	Dr. G. Elaiyaraja	√	√	√	√	√
5	Dr. A. Pulla Reddy	√	√	√	√	√
6	Mr. C.S.Murali Mohan	√	√	√	√	√
7	Mrs. R.Rani	√	√	√	√	√
8	Mrs. K. Jaya Sree	√	√	√	√	√
9	Mr. Y.Mahesh	√	√	√	√	√
10	Mr. R. Mallikarjuna Reddy	√	√	√	√	√
11	Mrs. B. Saroja	√	√	√	√	√
12	Mrs. C. Geetha	√	√	√	√	√
13	Mr. N. Kiran Kumar	√	√	√	√	√
14	Mrs. S. Chandana	√	√	√	√	√
15	Mrs. D. Reena	√	√	√	√	√
16	Ms. J. V. Pesha	√	√	√	√	√

17	Mrs. M. Bhargavi	√	√	√	√	√
18	Mr. .P.H. Chandra Mouli	√	√	√	√	√
19	Mrs.A.Kusuma kumari	√	√	√	√	√
20	Mr. P. Vemaiah	√	√	√	√	√
21	Mrs. P. Sirisha	√	√	√	√	√
22	Ms. V. Bharathi	√	√	√	√	√
23	Mrs. M. J. Chithraja	√	√	√	√	√
24	Mr. K. Guraiah	√	√	√	√	√
25	Mr. G. Mala Kondaiah	√	√	√	√	√
26	Mr. B.Praveen Kumar	√	√	√	√	√
27	Mr. D.Mohan Reddy	√	√	√	√	√
28	Mr. N. Gangadharam	√	√	√	√	√
29	Mr. V. Umamaheshwar Rao	√	√	√	√	√

G. S. Srinivas
Co-ordinator

S. Srinivas
HOD-ECE
DEPARTMENT OF ECE
VEMU INSTITUTE OF TECHNOLOGY
P. KOTHAKOTA - 517 112



VEMU INSTITUTE OF TECHNOLOGY

P.KOTHAKOTA, TIRUPATHI-CHITTOOR ROAD, CHITTOOR, AP-517112
(Permanently Affiliated to JNTUA Ananthapuramu, Approved by AITE New Delhi, & ISO 9001:2015 Certified Institution)

DEPT OF ELECTRONICS & COMMUNICATION ENGINEERING

Report-on

“Industrial IOT is using LoRa WAN Technology”

Faculty development program on “Industrial IOT is using LoRa WAN Technology” organized by Dept. ECE., VEMU Institute of Technology, Chittoor, from 01/06/2020 - 05/06/2020 through Online Flat form under MOU activity with Apply Volt. The FDP started with inauguration function at 9:00am on 01.06.2020. The programme was inaugurated by ECE Dept, VEMU IT .The Five day FDP Programme was started with Dr. S. Munirathnam, HOD of ECE, had welcomed Resource person Sri S. Karthikeyan, Principal Dr. Naveen Kilari and Vice Principal Dr.KVNV Rao. He had given introduction of all Dignitaries of the programme and invited guest. Dr. Naveen Kilari, Principal shared his views about the program. He informed that these kinds of FDP Programmes improves the knowledge in teaching. He congratulated the Department for organizing such a program through online.

The Guest and Speaker of this programme is Sri S. Karthikeyan, Senior Technical Engineer. He delivered the inaugural address and explained to the participants about the importance of FDP Programmes. On First day of FDP, he explained about Introduction to Embedded Systems,Basics of Arduino Hardware,Arduino Programming using IDE,Simulation of Sensor Integration with Arduino, Simulation of Actuator with Arduino. On 2nd day explained about Difference between Embedded Systems and IoT, Introduction to IoT, Comparing different wireless technology for IoT, Key role of LoRa in IoT, Application of LoRa. On third day explained about How to Configure LoRaWAN Gateway,Introduction MQTT Protocol,Uplink of Sensor data using MQTT Protocol to Application Server,Downlink data from Application Server to End Node.

On 4th day explained about the topics like Introduction to Network Server,Gateway Registration with Network Server,Application creation in Network Registration, Sending Data



VEMU INSTITUTE OF TECHNOLOGY

P.KOTHAKOTA, TIRUPATHI-CHITTOOR ROAD, CHITTOOR, AP-517112
(Permanently Affiliated to JNTUA Ananthapuramu, Approved by AITE New Delhi, & ISO 9001:2015 Certified Institution)

DEPT OF ELECTRONICS & COMMUNICATION ENGINEERING

from End Node to Network Server using ABP Mode. Last day Karthikeyan garu explained about Application Server Registration, Dashboard creation ,Widgets creation for realtime data ,Downlink Data from Application Page to End Device using exact Data,SMS/ Email/ Call Alert for Emergency Notification System.

Outcomes of the FDP acquire the fundamental information of LoRa WAN wireless Internet of Things. The technology was incorporated into Semtech's future RF platforms in an effort to expand the potential market of industrial and home automation RF applications, needing extended range at lower cost and lower power. For this Online FDP almost 100 people attended and they gave excellent feedback about this online FDP. The FDP was concluded with the participants to assess the participants learning followed by a valedictory on 05.06.2020 at 5:00 pm.


Co-Convener


Convener

HEAD
DEPARTMENT OF ECE
VEMU INSTITUTE OF TECHNOLOGY
P. KOTHAKOTA - 517 112



APPLY VOLT
www.applyvolt.com

Certificate OF COMPLETION

This Certificate is presented to


Mr. /Ms. _____

for Successful completion of

One Week Online E-certification FDP on Industrial IOT using LoRa Technology

held from 1st June 2020 to 5th June 2020.


RAMESH NAIDU .K
CO-FOUNDER
APPLY VOLT


DR. S. MUNI RATHNAM
Professor & HOD-ECE
Vemu Institute of Technology

