



**VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN**  
(An Autonomous Institution)

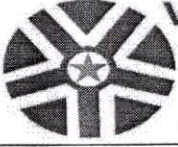
[Sponsored by Lavu Educational Society, Affiliated to JNTUH & Approved by AICTE, New Delhi]  
Kondapur (V), Ghatkesar (M), Medchal - Malkajgiri (D) - 501 301. Phone: 96529 10002/3



**INSTITUTIONAL PROGRAM CIRCULAR, BROCHURE, SYALLABUS, SCHEDULE AND PROGRAM REPORTS WITH OUTCOMES**

**INDEX**

S.NO	ACADEMIC YEAR	ADD-ON COURSE NAME
1	<b>2023-24</b>	Foundations of Web Development: HTML, CSS, and JavaScript
2		Introduction to Circuit Design
3		Data structures using python
4		Data Analytics Using Tableau
5		Introduction to Data Analysis using Python
6		Mobile App Development with Kotlin for Android
7		Analog and Digital Interfacing and Controlling
8		Development of IOT applications with Arduino
9		Generative AI tools and it's Applications
10		Advanced Data Structures
11		Mastering JavaScript Frameworks: React.js and Vue.js
12		Building REST API's with Node.js and Express
13		Energy-Efficient Antennas: Sustainable and Smart
14		Advanced data visualization Techniques in R
15		Natural Language Processing and Sequence Learning
16		Introduction to Optimization Methodology(ML&DL)
17		Full Stack Development with Django and React
18		Hands-on Machine Learning with Scikit-learn
19		Machine Learning Algorithms in VLSI Design
20		Android application development
21		Quantum Algorithms and Cryptography
22		Automation and testing using python programming



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**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

VMTW/CSE/AOC/2023-24/III/03

15-03-2024

**CIRCULAR**

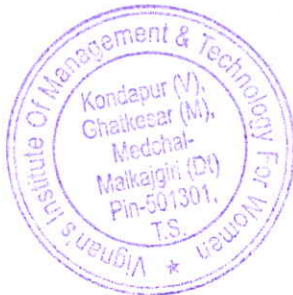
All II-II B. Tech CSE students are hereby notified that an Add-On Course entitled "Development of IOT Applications with Aurdino" will be offered from 18-03-2024 to 23-03-2024. Everyone can utilize the opportunity to enhance the skills and Certificates of completion will be presented to the students. Therefore, interested students can fill out the registration form and contact the respective coordinator accordingly.

  
HOD

**Copy to:**

The Principal for kind information  
IQAC  
Notice board  
II-II B.Tech Students  
Dept. file

Head of The Department  
Computer Science and Engineering  
Vignan's Institute of Management & Technology For Women  
Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri (Dt)-501301  
Telangana State





Principal  
Vignan's Institute of Management & Technology For Women  
Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri (Dt)-501301,  
Telangana State



# REGISTRATION FORM

Name: .....

Date of Birth & Age: .....

Gender (M/F): .....

Qualifications: .....

A). Institution: .....

B). Affiliating University: .....

Address for Communication: .....

Phone Nos. Office: .....

Personal: .....

Email: .....

LAST DATE FOR REGISTRATION: 17<sup>TH</sup> MARCH ,2024

Source Person:  
**Dr. P. Rajendra Prasad,**  
Assistant Professor,  
Dept. of CSE,VMTW.

Chief-patrons:  
**Dr. L. Rathaiah,**  
Chairman,  
Vignan Group of Institutions.

**Mr. B. Shraavan,**  
Chief Executive Officer,  
Vignan Group of Institutions

Patron:  
**Dr. G. Apparao Naidu,**  
Principal, VMTW

**Mrs.M.Parimala,** Assistant Professor  
& Head of the Department,  
Department of CSE.

Co-ordinator:  
**Mrs. B. Geetha,**  
Assistant Professor, Dept. of CSE,  
Contact No: +91 97035 98700

Student Co-ordinator:  
**Ms. sathwika,**  
Contact No: +91 94905 72845

**Ms. B.Shreya,**  
Contact No: +91 98492 13629



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## ADD-ON COURSE ON "DEVELOPMENT OF IOT APPLICATIONS WITH AURDINO"

18-03-2024 TO 23-03-2024

  
Principal  
Vignan's Institute of Management & Technology For Women  
Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri (Dt)-501301,  
Telangana State

VENUE:  
**'A'-BLOCK SEMINAR HALL, VMTW**  
ORGANIZED BY:  
**DEPARTMENT OF COMPUTER SCIENCE  
AND ENGINEERING**





## ABOUT THE INSTITUTION

Vignan's Institute of Management and Technology for Women (VMTW), is the brainchild of Dr. L. Rathaiah, Chairman, Vignan Group of Institutions, which was founded on August 2008, with four branches of Engineering.

VMTW is an exemplary institution of higher learning with a mission of pursuing excellence in education and research. The institution, with its diverse and dynamic community of about 2000 students offers a distinctive combination of some of the finest facilities for 7 different graduate, and undergraduate programs, accomplished faculty, world-class facilities with a hostel set on a sprawling area of 22 acres sylvan surroundings of mango groves and greenery.

While students at VMTW immerse themselves in academics, the college has a lot in store for them outside the classroom. Student life includes participation in sports, recreational & co-curricular, and cultural activities. In short, at VMTW students will find an academic and social environment where everyone from faculty members to peers helps shape their future.

VMTW is a home to aesthetically designed buildings with state-of-the-art computer and internet facilities, modern laboratories, workshops, seminar halls, auditoriums, and well-stocked libraries, sports, and games fields.

The Institution boasts of a strong alumni network with alumni events held every year serving as a platform for past students to give back to VMTW and share their experiences with its present fellow students. With so much to offer, it is only natural that students of VMTW get a unique opportunity to carve a niche for themselves in their chosen field of study that enables them to become well-rounded and discerning citizens, fully qualified for their chosen professions in the workplace. Institute also brings out the creativity in students by imparting engineering knowledge imbining interpersonal skills to promote innovation, research, and entrepreneurship.

## ABOUT THE DEPARTMENT

Department of CSE, VMTW has started B.Tech in Computer Science and Engineering in the year 2008 with an intake of 90. The scholarly ambiance in CSE Department is encouraging to the complete development of the students with well-equipped labs. Department has dedicated and professionally well competent faculty and the many of the faculty are pursuing Ph.D. in emerging areas like Artificial Intelligence, Machine Learning, Cyber Security, Data Science and Block Chain. The main objective is to prepare the students to be successful in Computer Science Engineer to meet the industry needs, encourage lifelong skills and strengthen research.

## ABOUT THE COURSE

Nowadays advancement of technology is rapidly increasing and people want to do tasks in a smart way. So, people are thinking about quick ways of solving Daily life tasks. This will result in a technology that can control domestic and industrial applications using IoT. The increase in demand for service over the Internet necessitated data collection and exchange in an efficient manner. In this sense, the Internet of Things (IoT) has promised the ability to provide efficient data storage and exchange by connecting physical devices via electronic sensors and the Internet. The course is designed to build simple circuits around the Arduino Uno, that implement simple functions. Write simple Arduino sketches that can get sensor readings, make LEDs blink, write text on an LCD screen, read the position of a potentiometer, and much more. Understand what is the Arduino. In this course, you will learn A basic understanding of what is the Internet of Things, IoT Terminology, What is the Arduino IoT Cloud Platform, How to set up your Arduino MKR boards to connect to the Arduino IoT Cloud, How to use the Arduino Internet of Things (IoT) Cloud Platform to build IoT apps with minimal code, How to build dashboards to monitor your Internet of Things (IoT) projects, peripherals and sensors, How to incorporate Webhooks in your Internet of Things (IoT) Applications, How to use the If This Then That (IFTTT) to integrate services into your IoT Applications.

## COURSE OBJECTIVES

The fundamentals of the program Arduino to control lights, motors, and other devices. To learn Arduino's architecture, including inputs and connectors for add-on devices. To add third-party components such as LCDs, accelerometers, gyroscopes, and GPS trackers to extend Arduino's functionality. To understand various options in programming languages, from C to drag-and-drop languages. To test, debug, and deploy the Arduino to solve real-world problems. To acquire basic knowledge of sensors and their hardware. Practical hands-on experience with interfacing sensors. Simple programming language to study the sensor operation. The objective of this course is to gain knowledge on the importance of the Internet of Things (IoT), the current components of typical IoT devices and trends for the future. The contents focus on IoT design, design constraints, interfacing between the physical world and devices and further implementation and intergradations of IoT ecosystems.

## EXPECTED OUTCOMES

Recall the basics of sensors and their functioning. Execute basic and advanced assembly language programs. Learn the ways to interface I/O devices with processors for task sharing. Recall the basics of co-processor and its ways to handle float values by its instruction set. Recognize the functionality of microcontrollers, the latest version processors and its applications. Acquire design thinking capability, the ability to design a component with realistic constraints, to solve real-world engineering problems and analyses the results. You will learn to design IoT components which would allow them to innovate new designs and products. IoT has revolutionized the digital world, by connecting all things together. Arduino is Open Source electronic prototyping platform. It is one of the most favour platforms with easy-to-use hardware and software. Arduino family has many ready-to-use hardware prototyping boards and one of the most versatile board is Uno popularly known as Arduino Uno.





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## DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

### ADDON COURSE SYLLABUS

Addon Course: Development of IOT Applications with Aurdino

#### Course objectives:

1. To Describe what IoT is and how it works today
2. To Recognise the factors that contributed to the emergence of IoT
3. To Design and program IoT devices
4. To Use real IoT protocols for communication
5. To Secure the elements of an IoT device

**1. Introduction to IOT:** Understanding IoT fundamentals, IOT Architecture and protocols, Various Platforms for IoT, Real time Examples of IoT.

**2. Arduino Simulation Environment:** Arduino Uno Architecture, Setup the IDE, Writing Arduino Software, Arduino Libraries, Basics of Embedded C programming for Arduino, Interfacing LED, push button

**3. Sensor and Actuators with Arduino:** Overview of Sensors working, Analog and Digital Sensors, Interfacing of Temperature, Humidity, Motion, Light and Gas Sensor with Arduino, Interfacing of Actuators with Arduino.

**4. Basic Networking with ESP8266 WiFi module:** Basics of Wireless Networking, Introduction to ESP8266 Wi-Fi Module, Various Wi-Fi library, Web server- introduction, installation, configuration, Posting sensor(s) data to web server

**5. Cloud Platforms for IOT:** Virtualization concepts and Cloud Architecture, Cloud computing, benefits, Cloud services -- SaaS, PaaS, IaaS, Cloud providers & offerings, Study of IOT Cloud platforms.

#### Text Books:

1. Building Arduino Projects for the Internet of Things: Experiments with Real-World Applications by Adeel Javed (Author).
2. IoT Projects with Arduino Nano 33 BLE Sense: Step-By-Step Projects for Beginners by Agus Kurniawan (Author).

*B. Geetha*

COORDINATOR



*[Signature]*

Principal

Vignan's Institute of Management & Technology For Women  
Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri (Dt)-501301  
Telangana State

*[Signature]*  
HOD

Head of The Department  
Computer Science and Engineering  
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**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

**DAY WISE SCHEDULE SHEET**

**Addon Course:** Development of IOT Applications with Aurdino

**Room No:** A Block Seminar Hall

DAY	Topic	Timings	Duration
18-03-2024	<b>Introduction to IOT:</b> Understanding IoT fundamentals, IOT Architecture and protocols.	09:00 am to 03:30 pm	6 hrs
19-03-2024	<b>Arduino Simulation Environment:</b> Arduino Uno Architecture, Setup the IDE, Writing Arduino Software.	09:00 am to 03:30 pm	6 hrs
20-03-2024	<b>Sensor and Actuators with Arduino:</b> Overview of Sensors working, Analog and Digital Sensors, Interfacing of Temperature.	09:00 am to 03:30 pm	6 hrs
21-03-2024	<b>Basic Networking with ESP8266 WiFi module:</b> Basics of Wireless Networking, Introduction to ESP8266 Wi-Fi Module.	09:00 am to 03:30 pm	6 hrs
22-03-2024	<b>Cloud Platforms for IOT:</b> Virtualization concepts and Cloud Architecture.	09:00 am to 03:30 pm	6 hrs
23-03-2024	Cloud computing, benefits, Cloud services -- SaaS, PaaS, IaaS, Cloud providers & offerings, Study of IOT Cloud platforms.	09:00 am to 03:30 pm	6 hrs
<b>Total 36 hours</b>			

*B. Geetha*  
COORDINATOR

*Fasimela*  
HOD



*Principal*  
Principal  
Vignans Institute of Management & Technology For Women  
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## DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Date: 26-03-2024

### PROGRAM REPORT

**Name of the Add on Course:** Development of IOT Applications with Aurdino

**Day/Duration:** 19-03-2024 to 23-03-2024 6(Days) - 36Hrs

**Time:** 09:00am to 03:30pm

**Resource Person:** Dr.P.Rajendra Prasad, Associate Professor, Dept oCSE.



**Name of the Coordinator:** Mrs.B.Geetha, Asst Professor, Dept of CSE, VMTW.

**Number of the Participants:** 182

**Topics covered:** The following topics covered in this program

- IoT fundamentals, IOT Architecture and protocols,
- Arduino Simulation Environment: Arduino Uno Architecture, Setup the IDE, and Actuators with Arduino, Overview of Sensors working, Analog and Digital Sensors, Interfacing of Temperature.
- Basic Networking with ESP8266 WiFi module, Basics of Wireless Networking, Introduction to ESP8266 Wi-Fi Module.
- Platforms for IOT



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### Course Outcomes:

COs	At the end of the course, students will have the ability to:	Pos Mapped	Strength of mapping
C01	Understand the importance of internet of things in present scenario	PO1,PO2	3
C02	Describe the interfacing of IoT	PO2	2
C03	Design of direct and alternating type of electrical instruments using arduino	PO3,P05	4
C04	understand the key components that make up an IoT system	PO1,PO2	3
C05	apply the knowledge and skills acquired during the course to build and test a complete, working IoT system	PO6	4

**COORDINATOR**

**HOD**

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