KAMARAJ
COLLEGE OF ENGINEERING & TECHNOLOGY

(An Autonomous Institution - AFFILIATED TO ANNA UNIVERSITY, CHENNAI)
S.P.G.Chidambara Nadar - C.Nagammal Campus
S.P.G.C. Nagar, K.Vellakulam – 625 701 (Near VIRUDHUNAGAR).

DEPARTMENT OF

ELECTRONICS AND COMMUNICATION ENGINEERING

Value Added Course

on

IoT Application Design using Raspberry Pi and Python

Date : 31.07.2023 to 05.08.2023 **Class : III ECE**

No. of Participants: 20

Academic Year: 2023-2024

(ODD Semester)

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1.	Academic Year	:	2023-2024
2.	Regulation	:	2021
3.	Department Name	:	Electronics and Communication Engineering
4.	Name of the Value Added Course	:	IoT Application Design using Raspberry Pi and Python
5.	No. of Credits	:	2
6.	Category: Theory/Lab/Hands-on/Skill based etc	:	Hands-on
7.	Name and Details of the Joint-organization (industry/NGO etc) if any	:	Enthu Technology Solutions India Pvt. Ltd, Coimbatore
8.	Resource person details	:	Mr. R.Jagadeswaran Technical Engineer Enthu Technology Solutions India Pvt, Ltd., Coimbatore
9.	Three Member Committee details	:	1. Dr. R. Suresh Babu, HoD/ECE 2. Dr. T. Prathiba, Course Incharge & Expert 3. Er. S. Alwyn Rajiv, Chairperson
10.	VAC Coordinator Details	:	Dr.T.Prathiba, AP/ECE
11.	Duration (30 h mandatory)	:	45 Hours
12.	Period	:	31.07.2023 to 05.08.2023 (6 Days)
13.	Venue	:	VLSI Lab (ECE Dept.)

Guidelines / Assessment of VAC:

1. Internal 40 Marks. Preferably Assignments such as mini projects, presentations, worksheets, etc.
2. External 60 Marks. MCQs type.
   MCQs Type question paper pattern : Part A – 30 x 1 = 30 Marks, Part B – 15 x 2 = 30 Marks
   Total (IM + EM): 100 Marks
   Passing Criteria: 50 Marks
   No revaluation and no re-exam will be entertained.
3. Mode of External Exam: Online proctored mode
4. Duration of the Exam: 1 h 30 min

T. Rama

VAC Coordinator

HoD

Dean (Academic Courses)

Encl:

1. Syllabus Copy
2. BoS Approval
3. Three Member Committee MoM
4. Geo-Tagged Photos
5. Certificates of all participants
6. Questionnaire
7. Attendance Sheet
8. Evaluated Answer script
9. Test Report
10. Feedback form
11. Feedback analysis
12. Students' oral feedback and Video (recorded video)

Enthu Technology Solutions India Pvt Ltd
Plot No: 32, P.M.R Layout, 5th Street, Block - B,
Deepa Mill Road, Goldwins, Civil Aerodrome Post,
Coimbatore
India
GSTIN : 33AADCE9083H1ZJ

Syllabus

Proforma Invoice

ETS/22-23/PI/303

Proforma Invoice Date	04-06-2023	**Place of Supply**	Tamil Nadu
Valid Upto	19-06-2023		
Reference#	Your phone call dated on 03.06.2023		

Bill To

Kamaraj College of Engineering and Technology
S.P.G.Chidambara nadar - C.Nagammal Campus
S.P.G.C. Nagar,K.Vellakulam
Virudhunagar , Tamil Nadu - 625701 India
(+91)4549 278171

Ship To

Kamaraj College of Engineering and Technology
S.P.G.Chidambara nadar - C.Nagammal Campus
S.P.G.C. Nagar,K.Vellakulam
Virudhunagar , Tamil Nadu - 625701 India
(+91)4549 278171

S.NO	ITEM & DESCRIPTION	HSN/SAC	QUANTITY	UNIT PRICE	EXTENDED PRICE
1	Onsite 6 day Value Added Course on IoT Application Design using Raspberry Pi and Python	999293	20	1,800.00	36,000.00 ₹
Totals			**20**	**1,800.00 ₹**	**36,000.00 ₹**

Items in Total : 20

Sub Total	**36,000.00 ₹**
CGST	**3,240.00 ₹**
SGST	**3,240.00 ₹**
Total	**42,480.00 ₹**

Total In Words :**Forty-Two Thousand, Four Hundred And Eighty Rupees only**

Program Title: Onsite 6 day Value Added Course on IoT Application Design using Raspberry Pi and Python
The Program Proposed by: Dr.R.Sureshbabu & Dr.T.Prathiba
Eligible Branch: BE
Maximum Strength:20
Hands-On Training Period: 6 days
Training Charges: Rs. 300 per student per day

Objective:
- To introduce the fundamental architecture of Microcontrollers
- To Learn the interface of peripheral devices (Sensors/Actuators)
- Understand the concept of Wireless Communication Protocols for Raspberry Pi
Applications (Wi-Fi, Bluetooth, BLE)
- Understand the concept of MQTT, HTTP Protocols

Pre-requisite (Technical):
- Basic Knowledge of Microcontroller
- Basic Knowledge of Python Programming

Topics to be covered in the Technology Training Period:
Day 1
Session I
- Introduction to Raspberry Pi
- Types of Raspberry Pi Board
- Raspberry Pi Board Specification
- GPIO inputs/outputs
- Raspian OS Installation

Session II
- Raspian OS Configuration
- Python Programming
- Introduction to Python
- GPIO Initialization
- Hardware programming using Python 3 in Raspberry Pi

Day 2
Session I
- Sensor interfacing and data accessing using Raspberry Pi

For Enthu Technology Solutions India Pvt. Ltd.

Dr. K. Subramanian
Technical Lead
Enthu Technology Solutions India Private Limited
Coimbatore-04
Cell: 9944849058 | Email: subramanian@enthutech

Authorized Signature

- Tilt Sensor
- Flame Sensor
- DHT11
- Ultrasonic Sensor

Session II
- Actuators Interfacing
- Device Control Using Raspberry Pi
- Introduction to Servo Motor
- Types of Servo Motor
- Servo Motor interfacing with Raspberry
- Introduction to Stepper Motor
- Types of Stepper Motor
- Stepper Motor interfacing with Raspberry

Day 3
Session I
- Introduction Communication Protocols
- Device Control
- Relay Control using raspberry pi
- Protocol Implementation using Raspberry Pi
- Interfacing DHT11 using Raspberry Pi

Session II
- Introduction to ADC interfacing with Raspberry Pi
- Analog Sensor interfacing with Raspberry Pi
- PWM interfacing
- Interfacing ADXL345 with Raspberry Pi

Day 4
Session I
- Introduction to Bluetooth
- Applications
- Device control and data access using Bluetooth
- LED control using Bluetooth device

Session II
- Introduction to BLE
- Applications
- Device control and data accessing using BLE
- Interfacing Data read/write

Day 5:
Session I
- Cloud Applications Thingspeak
- Introduction to Cloud Accessing in Raspberry Pi
- Data Accessing and Monitoring in the Cloud
- Device control using Cloud application

Session II
- Introduction to MQTT
- Device control using Mobile Application (MQTT)
- Introduction to the Node-Red platform
- Device control and Data monitoring in the dashboard
- Review
- Assessment

Day 6
- Project Support and Review

Syllabus designer for the course:
- Industry: ENTHU ACADEMIC SOLUTIONS, Academic division of Enthu

Technology Solutions India Pvt. Ltd, #90, First Floor, SSN Square, Peelameduputhur, Coimbatore -641 004.

Hardware required: (Provided By Industry on a returnable basis to each batch)
- Raspberry PI4 Board
- Digital and Analog sensors

Sensor & Actuators Used for Practical Learning: (Provided By Industry on a returnable basis to each batch)
- LED – 3 qty
- Soil Moisture Sensor – 1 qty
- BH1750 Sensor – 1 qty
- IR sensor – 1 qty
- Ultrasonic Sensor - 3 qty
- PIR Sensor – 1 qty
- Flame Sensor – 1 qty
- DHT11 Sensor -3 qty

Software required: (Provided By Industry to each batch)
- Raspbian OS for Windows
- Raspberry Pi device library

Infrastructure Requirements from Institution for Hands-on :
- Individual PC / Laptops are mandatory
- Projector classroom & Board with Marker
- 230V, 5A Socket for Development Board-Power Supply
- Uninterrupted WiFi without Firewall(Most Mandatory)
- Multimeter and necessary extension boxes.
- Audio systems: Mic & Speaker

The outcome of the Course: The participants will be able to,
- Work with modern tools and the latest hardware
- Work in a team/Individual with ethical values
- Apply their knowledge to give solutions for client requirements
- Innovate ideas and solutions to existing/novel problems
- Exposure to the Latest Technologies

Terms & Conditions
- Payment: Immediate Payment
- Mode of Training: Onsite/ Institute
- Duration of Training: 6 Days, 5 hours per day
- Session of Training: 2 per day
- Batch Size: 20
- Training date: June 2023

Additional:
TA & DA applicable for Enthu Tech Resource Person (Actual)
1. Resource person's travel will be taken care of by Enthu Tech
2. Food & accommodation will be provided at the Institute Guest House/Outside of the Campus.
- We will give our kits (which will carry from our team) to the participants on a returnable basis(15 kits for 15 batches, 2 participants for each batch).
- During Practical if Hardware Damage is caused by students i.e. will be charged from students(Institute should support this)
- In case of any development and issues with your hardware our resource team won't take responsibility for developing and rectifying your hardware at that period of time.

T- [signature]
VAC coordinator

24/11/23
HOD/ECE

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Department of Electronics and Communication Engineering

Seventh BoS Meeting Minutes

Date : 30.09.2023

Time : 2.00 PM

Venue : VLSI Lab, ECE Department

Link (hybrid mode) : https://tinyurl.com/mu6nhaud

The following members were present:

S.No.	Name of the Expert	Designation	Capacity
1.	Dr.E.S.Gopi, Ph.D.,	Associate Professor/ECE National Institute of Technology, Tiruchirappalli, Tamil Nadu	Anna University Nominee (Online mode)
2.	Dr. M. Sabarimalai Manikandan Ph.D.,	Associate Professor, Department of Electrical Engineering, Indian Institute of Technology Palakkad	Academic Council Nominee 30/01/2023
3.	Dr. A Kannammal, Ph.D.,	Associate Professor/ ECE PSG College of Technology, Avinashi Rd, Peelamedu -641004, Coimbatore	Academic Council Nominee (Online mode)
4.	Mr.M.Chinnathambi, M.E.,	Technical Lead Viasat India, Global Infocity, Module 1&2, 5th Floor, Block C, No.40, MGR Salai, Perungudi- 600 097, Chennai.	Industrial Expert
5.	Ms.A.Anto Amala, M.E.,	Associate Staff Engineer, Samsung Semiconductor India Research, Laxmi Sagar Layout, Mahadevapura, Bengaluru, Karnataka 560048	Alumni

Internal Faculty Members of BoS			
S.No.	**Name of the Faculty**	**Designation**	**Signature**
1.	Dr.R.Suresh Babu	Professor & Head	
2.	Dr.T.Pandiselvi	Associate Professor	
3.	Dr.N.M.Mary Sindhuja	Associate Professor	30/9/2023
4.	Dr.T.Prathiba	Assistant Professor	30/9/23
5.	Dr.S.Nisha Rani	Assistant Professor	30/09/2023
6.	Mrs.C.Nagavani	Assistant Professor	30/9/'23
7.	Mr.P.Aravind	Assistant Professor	
8.	Mr.R.Ashok	Assistant Professor	
9.	Mrs.M.Stella Mercy	Assistant Professor	
10.	Mr.S.Alwyn Rajiv	Assistant Professor	
11.	Mrs.P.Muthumari	Assistant Professor	
12.	Mrs.P.Ramalakshmi	Assistant Professor	
13.	Mr.R.Rajprabu	Assistant Professor	

007.01.00 : Welcome address by HoD

- Dr.R.Suresh Babu, Professor & Head welcomed the BoS members.

007.02.00 : Approval of 6th BoS Meeting Minutes & Action taken

Item No.	Suggestions of BoS Members in 6th BoS Meeting	Action Taken
1.	Dr.E.S.Gopi, Ph.D., suggested to include prerequisites for each course in the Professional elective list.	Unit I is framed as basic for all the professional courses
2.	Dr.E.S.Gopi, Ph.D., insisted to have some of the courses as industry based and partially it can be handled by the experts from industry.	Semiconductor Test Engineering Course will be handled by the faculty members trained by Tessolve Semiconductor pvt ltd, Bangalore. Tessolve Semiconductor Industrial persons will also handle some topics. Value added courses are completely handled by the industrial persons.
3.	Dr.E.S.Gopi, Ph.D., also suggested to have Data Analytics as a common course for all the departments.	Data Analytics course is included in Institute level minor courses.
4.	Dr. M. Sabarimalai Manikandan Ph.D., insisted to give Open ended projects across the departments.	Many students are doing projects with other department students
5.	Dr.E.S.Gopi, Ph.D., and Dr. M. Sabarimalai Manikandan Ph.D., suggested to include Microprocessor as 1 unit in Embedded and modify the course name as Microprocessor and Embedded Systems	Included Microprocessor as 1 unit in Embedded and modified the course name as Microprocessor and Embedded Systems
6.	Dr.E.S.Gopi, Ph.D., insisted to combine control systems with Signals and Systems. Include the course Statistical Theory of Communication which may include Detection, Estimation and Information Coding. Dr.T.Prathiba suggested to bring the course Artificial Intelligence and Machine Learning in VI Semester. Move the course Statistical Theory of Communication in VII Semester.	Control system is combined with sensors and is included as Profeesional Elective. Included the course Statistical Theory of Communication which may include Detection, Estimation and Information Coding. Artificial Intelligence and Machine Learning is brought to VI Semester
7.	Dr.E.S.Gopi, Ph.D., and Dr. M. Sabarimalai Manikandan Ph.D., suggested to include Microprocessor experiments also and modify the course title for Embedded	Microprocessor experiments are included and modified the course title as Microprocessor and Embedded Systems laboratory

	Systems laboratory as Microprocessor and Embedded Systems laboratory	
8.	Dr.E.S.Gopi, Ph.D., and Dr. M. Sabarimalai Manikandan Ph.D., suggested to rename the course VLSI Testing and Design for Testability as VLSI Architecture for Signal Processing and Machine Learning	VLSI Testing and Design for Testability course is renamed the course as VLSI Architecture for Signal Processing and Machine Learning
9.	Dr.E.S.Gopi, Ph.D., suggested to include the Acoustics also in Speech Processing course. Hence the course name is changed as Acoustics & Speech Processing	Included Acoustics and the course name is changed as Acoustics & Speech Processing
10.	Dr.E.S.Gopi, Ph.D., insisted to remove DSP Architecture and Programming course. Instead he suggested to include Pattern recognition and Computational Intelligence	Removed DSP Architecture and Programming course and included Pattern recognition and Computational Intelligence
11.	Dr. M. Sabarimalai Manikandan Ph.D., insisted to remove Multimedia Compression Techniques course. Instead he suggested to include Deep Learning	Removed the course Multimedia Compression Techniques. Included Deep Learning course
12.	Dr. M. Sabarimalai Manikandan Ph.D., suggested to include SONAR along with RADAR. So, the course name is changed to RADAR & SONAR Signal Processing	Included SONAR and the course name is changed to RADAR & SONAR Signal Processing
13.	Dr. M. Sabarimalai Manikandan Ph.D., insisted to remove Microprocessor and Microcontroller course. Instead he suggested to include Sensors and Control Systems.	Microprocessors are included in Microprocessor and Embedded Systems course. So, removed the course Microprocessor and Microcontroller. Included Sensors and Control Systems.
14.	Dr.E.S.Gopi, Ph.D., insisted to remove Bio-sensors and Instrumentation course. Instead he suggested to include MEMS & Nanoelectronics	Removed Bio-sensors and Instrumentation course. MEMS & Nanoelectronics course is included.
15.	Dr. M. Sabarimalai Manikandan Ph.D., suggested to remove the course RFID and include the topics of RFID and sensors in Internet of Things Course. Instead, basics of Wireless Technologies course may be included with various wireless technologies used for Sensor Technologies.	The course RFID is removed and included the topics of RFID and sensors in Internet of Things Course. Wireless Technologies Course is included.

16.	Dr. M. Sabarimalai Manikandan Ph.D., suggested to rename the course Communication Protocol and Network Security for IoT as Device and Data Security	Renamed the course Communication Protocol and Network Security for IoT as Device and Data Security
17.	Dr. M. Sabarimalai Manikandan Ph.D., suggested to rename the course Basic Electronics and its Applications as Analog Devices and Circuits.	The course Basic Electronics and its Applications is renamed as Analog Devices and Circuits.
18.	Dr.E.S.Gopi, Ph.D., and Dr. M. Sabarimalai Manikandan Ph.D., verified the syllabus of Machine Learning and Embedded Systems and insisted that machine learning and Embedded systems are two different courses and it is a dumped syllabus. Focus only on Machine Learning and the course name may be changed as Introduction to Machine Learning.	Machine Learning and Embedded Systems course is changed as Introduction to Machine Learning
19.	Dr. M. Sabarimalai Manikandan Ph.D., suggested to rename the course Electronic Product Design using PCB as Electronic System Design	The course Electronic Product Design using PCB is renamed as Electronic System Design
20.	Dr.E.S.Gopi, Ph.D., insisted the following regarding NPTEL • In R2020, Online course is a core course. If NPTEL is the online course, then in the transcript it may be printed as NPTEL course or the NPTEL course name (Which is chosen by the student). • If a student fails in NPTEL, it should not be considered as arrear if he compensates with subjects handled by the department. • Mentor role is very important in NPTEL course.	Dr.E.S.Gopi, Ph.D., was discussed in Academic Council meeting. It is decided that the NPTEL course name will be printed on the manuscript. If a student could not pass until the seventh semester, he has to write the theory course in VIII semester. The name of the theory course will be mentioned in the transcript.

- BoS members approved the action taken in 6th BoS Meeting Minutes

007.03.00 : Discussion and approval of

007.03.01 : Proposed Curriculum and Syllabi for VII and VIII Semester

VII Semester

Name of the Course	Suggestions from BoS members
Universal Human Values and Ethics	Approved the course and syllabus
Statistical Theory of Communication	Approved the course and syllabus

VIII Semester

Name of the Course	Suggestions from BoS members
Project Work	Approved the course

007.03.02 : List of Open Elective 1,2,3 & 4 courses offered

Name of the Course	Offered to	Suggestions from BoS members
Fundamentals of Electronic Devices and Circuits	CSE, IT, ADS, EEE, Mechanical, Civil, Mechatronics and Bio-Technology	1. Dr.M.Sabarimalai Manikandan Ph.D., suggested that instead of wave shaping circuits, include linear Integrated circuits using op-amp with the topics of Integrator, Differentiator, differential amplifier and Instrumentation amplifier. 2. Also he insisted to frame the new course as combine as follows. Unit I with Unit III contains special diodes. Add Basics of Digital Electronics as Unit V can be included with the topics of combinational and sequential circuits. For the digital electronics unit the text book "Digital Fundamentals" authored by, Thomas L. Floyd may be included.
Telecommunication Network Management	CSE, IT, ADS, EEE, Mechanical, Civil, Mechatronics and Bio-Technology	1. Dr.M.Sabarimalai Manikandan Ph.D., suggested that Telecommunication Network Management course may be replaced with "Sensors and Wireless Technologies" course because Telecommunication Network Management course is the outdated one. 2. They also insisted to frame the new course as, Unit I & Unit II can be framed with Sensors topics, Unit III - Basic Modulation scheme, Unit IV-Wireless Radios and standards including the topics of Wifi, Bluetooth, Zigbee, LoRa. RFID, LTE, Wimax,5G and Unit V with Wireless Network Topologies - Ring, Star, Mesh, Bus and ISO model.

VLSI Design	CSE, IT, ADS, EEE, Mechanical, Civil, Mechatronics and Bio-Technology	1. Dr.M.Sabarimalai Manikandan Ph.D., and Dr.E.S.Gopi, Ph.D., suggested that VLSI Design course is tough for other department students. So, they insisted to change the course as MEMS & VLSI. 2. They also insisted to frame the new course as follows. Digital Logic as Unit I covered with topics of Basic logic families. CMOS VLSI as Unit II, Unit III and Unit IV may be covered with MEMS concepts. Verilog programming as Unit V with programming of Analog & Digital Design. More weightage may be given for programming.
Industrial IoT and Industry 4.0	CSE, IT, ADS, EEE, Mechanical, Civil, Mechatronics and Bio-Technology	Dr.M.Sabarimalai Manikandan Ph.D., suggested to change the Industrial IoT and Industry 4.0 course title into Industry 4.0. Unit I title is changed as Introduction to Industry 4.0. Unit II may be based on IoT Components. Unit III Security Systems is about autonomous vehicles. Unit IV may be Data Analytics and Imaging Systems.
Medical Electronics	CSE, IT, ADS, EEE, Mechanical, Civil, Mechatronics and Bio-Technology	Dr.M.Sabarimalai Manikandan Ph.D., insisted to combine Unit I and Unit II. He also insisted that in Unit II, include topics under Medical Imaging Modalities such as X-ray, CT Scan, PET, Magnetic Resonance Imaging Systems, Ultrasonic Imaging Systems. Rangaraj M Rangayyan, 'Biomedical Signal Analysis-a case-study approach' may be included as one of the reference books

- Dr. E. S. Gopi, Ph.D., insisted that for all the open elective courses must be self-explanatory.
- Dr. E. S. Gopi, Ph.D., and Dr. M. Sabarimalai Manikandan Ph.D., insisted to add Introduction to Signal Processing as one of the open elective courses.

007.03.03 : List of courses for PhD candidates

Name of the Course	Suggestions from BoS members
Advanced Design of Experiments	Approved the course and syllabus
Big Data	Approved the course and syllabus
Deep Learning	Approved the course and syllabus
Machine Learning	Approved the course and syllabus
Internet of Things	Approved the course and syllabus

- Dr. E. S. Gopi, Ph.D., and Dr. M. Sabarimalai Manikandan Ph.D., suggested to include Linear Algebra, Probability and Statistics, Numerical Methods and Computing and more courses for PhD course works

007.03.04 : Human Values and Ethics Courses

Name of the Course	Suggestions from BoS members
Universal Human Values and Ethics	Approved the course and syllabus

007.04.00 : ITEMS FOR RATIFICATION

007.04.01 : Changes or Corrections in the existing Curriculum of R2020 and R2021

Existing	Corrections required and specify the reasons
Mini Project, R2021	To move from VII semester to VI semester because it will be helpful for students placement in VII semester.
Statistical Theory of Communication, R2021	To move from VII semester to VI semester
EC2352/Microprocessor and Embedded Systems, R2021	To move from VI semester to VII semester
EC2353/Microprocessor and Embedded Systems laboratory, R2021	To move from VI semester to VII semester

007.04.02 : NPTEL Examination results (students performance) and action taken for the students who did not receive the certificates

- Students have to complete two 3 credits NPTEL courses mandatorily for R2020 curriculum.
- In IV ECE (2021-2024 Batch) under R2020, total number of students in the class is 61. In that, 3 students have cleared 3 courses, 48 students have completed 2 courses, 6 students have completed 1 course and 4 students didn't complete any of the NPTEL courses.

NPTEL Online Exam (January to April 2022)

Sl.No	Course Id	Course Title	Offered Institute	No. of Students Registered	No. of Students attended	No. of Students passed	No. of Students failed	Pass %
1	noc22-ee45	Digital System Design	IIT Ropar	61	61	24	37	39.34

NPTEL Online Exam (July to October 2022)

Sl.No	Course Id	Course Title	Offered Institute	No. of Students Registered	No. of Students attended	No. of Students passed	No. of Students failed	Pass %
1	noc22-hs76	Soft Skills	IIT, Roorkee	58	58	48	10	82.75
2	noc22-cs96	Introduction to Internet of Things	IIT, Kharagpur	10	10	10	--	100

NPTEL Online Exam (January to April 2023)

Sl.No	Course Id	Course Title	Offered Institute	No. of Students Registered	No. of Students attended	No. of Students passed	No. of Students failed	Pass %
1	noc23-mg33	Principles of Management	IIT, Roorkee	23	23	9	14	39.1
2	noc22-cs96	Introduction to Internet of Things	IIT, Kharagpur	25	25	20	5	80

Action Plan

- 6 students (1 course completed) + 4 (No Courses Completed) who failed in the registered subjects have to compensate with the subjects Softskills / IoT for this semester in NPTEL.
- Mentors are asked to monitor the assignment submissions of students.

007.04.03 : Curriculum feedback and action taken if any

- Collected the curriculum feedback from the students and action plan is being carried out.
- Dr. E. S. Gopi, Ph.D., insisted not to collect curriculum feedback from students, instead other stake holders feedback must be collected.

007.04.04 : Value Added Courses offered – ratification

The following are the value added courses conducted for the III year students in the academic year 2023-2024.

S. No.	Course Name	Resource Person	Participants	Date
1.	Value Added Course on Deep Learning	Mr.R.Ramachandran, Pantech eLearning Pvt Ltd.,	III ECE – 20 students	31st July 2023 to 05th August 2023
2.	Value Added Course on IoT Application Design using Raspberry Pi and Python	Mr.R.Jegadeswaran, Enthu Technology Solutions India Pvt Ltd.	III ECE – 20 students	31st July 2023 to 05th August 2023
3.	Value Added Course on The Internet of Things using LoRaWAN Technology	Dr. Subramaniam Enthu Technology Solutions India Pvt Ltd.	III ECE – 20 students	31st July 2023 to 05th August 2023

- BoS members approved the Value added courses conducted.

007.05.00: Information about the (Points Discussed in the following)

Item No.	Description	Suggestions / Comments from the BoS Members
007.05.01	Number of students doing Honours/ Honours with Specialization Minors and its respective courses	The HOD Presented the number of students doing Honours/ Honours with specialization/ Minors and its respective courses …. 1. Honors with Specialization degree-Semiconductor Chip Design and Testing-10 2. Honors with Specialization degree-Sensor Technologies and IoT-2 3. Honors degree – 9 4. Minor degree- Computing Technology-13
007.05.02	Student Internship Completion details	The HOD shared the statistical data of the student internship/ Inplant training details for R2020 & R2021 - All the 61 students of IV ECE (R2020) have completed. - All the 60 Students of III ECE (R2021) have completed.
007.05.03	Pass Percentage of students	The HOD Presented the Pass percentage yearwise and course wise for the academic year 2022-2023 (Even). II Year- Pass percentage -76.67% III Year- Pass percentage – 88.53% IV Year- Pass percentage – 100%

007.05.04	Value Added Courses offered/ Planned for the academic year : 2023 – 2024	The HOD Presented the Value added course planned for II year students for the academic year 2023-2024 1. Integrated Full stack web development with IoT Networks 2. IoT Applications using Node MCU and Raspberry Pi 3. Machine Learning using Python
007.05.05	NBA eSAR / status /compliance preparation and its information	The HOD happily shared the NBA eSAR / Status On 09.04.2023 – NBA Compliance audit was held. Received NBA reaccreditation extended for three years (July 2023- July 2026)
007.05.06	Department achievements between 6th and 7th BoS	HoD happily shared the department, student and faculty achievements with the BoS members.

007.06.00 : Any other Item

- Next BoS Meeting is tentatively scheduled on March 2024.

007.07.00 : Vote of Thanks

- The meeting ended with the Vote of Thanks by Dr.S.Nisha Rani, Assistant Professor, Department of Electronics and Communication Engineering, Kamaraj College of Engineering and Technology, Virudhunagar.

6/10/2023

BoS Coordinator

Dr.S.Nisha Rani, AP/ECE

6/10/2023

BoS Chairman

Dr.R.Suresh Babu

HoD / ECE

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06/06/2023

3N

Minutes of 3 Member Committee Meeting

Member 1 - Head of the Department - Dr.R.Suresh Babu

Member 2 – Course Incharge &Expert Member – Dr. T. Prathiba

Member 3 - Chairperson – Mr. S. Alwyn Rajiv

The following points were discussed in the 3 Member Committee meeting held on 06th June 2023.

1. Discussed about the Syllabus given by Enthu Technology Solutions India Pvt. Ltd, Coimbatore on 7th June 2023.
2. Decided to conduct online pre requirement session to III ECE Students on 28th July 2023.
3. The dates of the course were decided in the meeting as 31/07/2023 & 05/08/2023 (6 days).
4. Discussed to conduct review of project after the completion of the course.
5. Discussed about the venue of value added program.

T. Prathiba
Course In-charge

S. Alwyn
Class Chairperson

R.J — 7/6/23
HOD/ECE

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S.P.G.C. Nagar, K.Vellakulam – 625 701 (Near VIRUDHUNAGAR).

DEPARTMENT OF

ELECTRONICS AND COMMUNICATION ENGINEERING

Value Added Course on

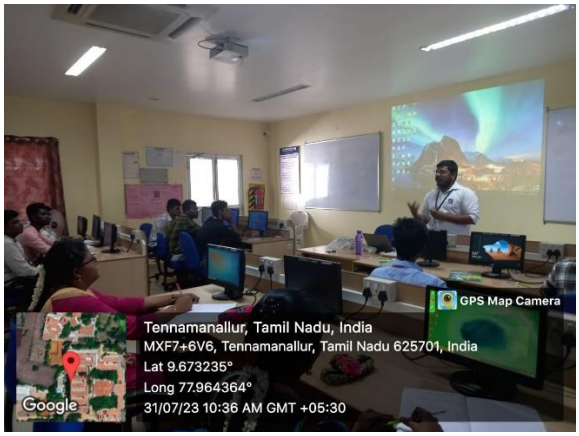
IoT Application Design using Raspberry Pi and Python

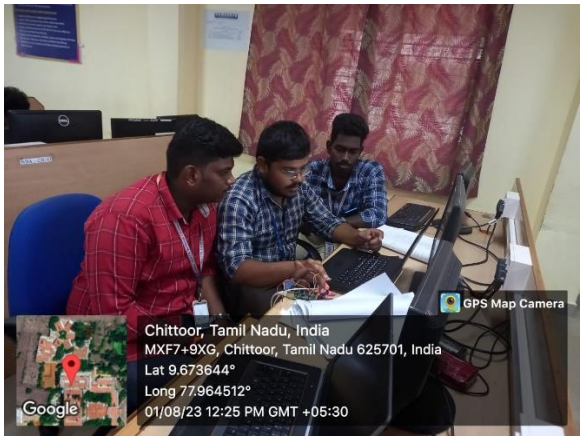
Date: 31.07.2023 to 05.08.2023 **Class : III ECE**

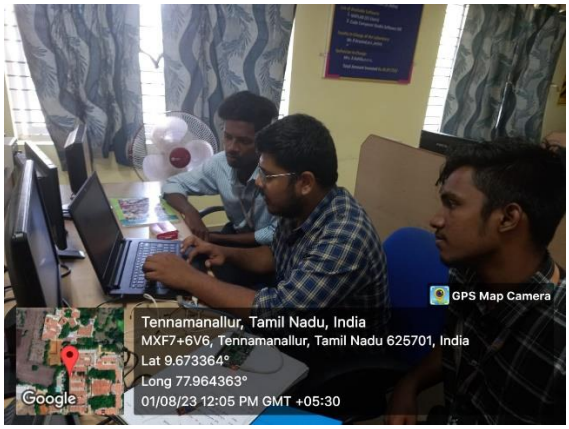
Geo Tagged Photos

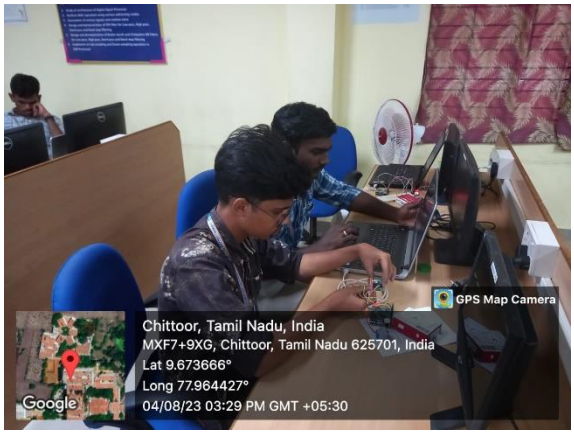
Inaugural Function

Session Photos with Resource Person





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MXF7+9XG, Chittoor, Tamil Nadu 625701, India
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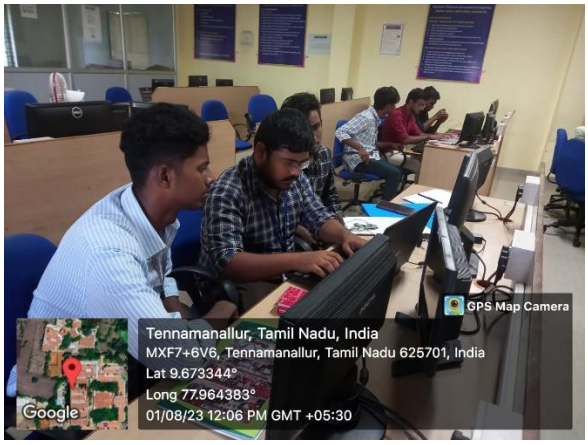
Google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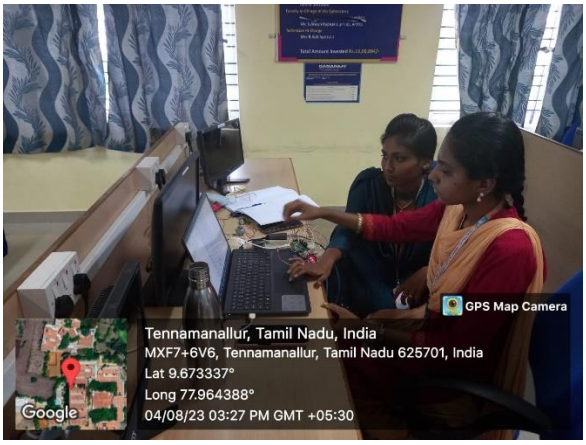
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MXF7+6V6, Tennamanallur, Tamil Nadu 625701, India
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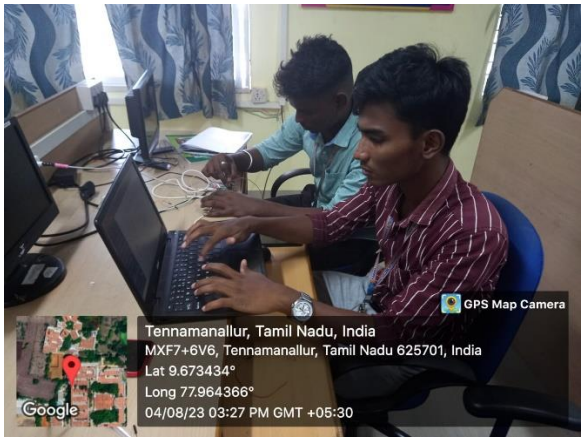
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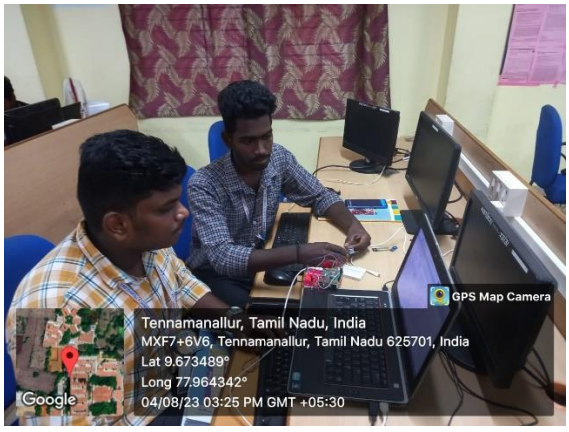
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MXF7+6V6, Tennamanallur, Tamil Nadu 625701, India
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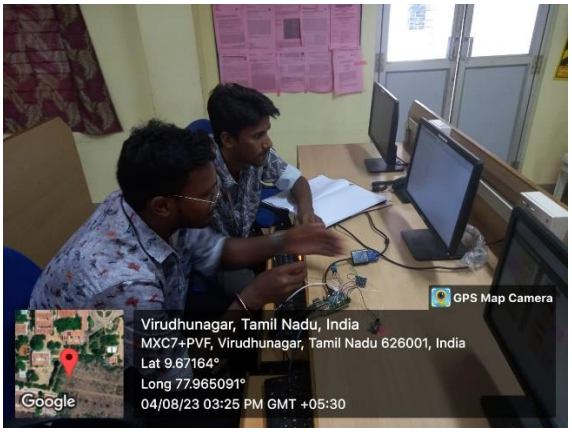
Google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Virudhunagar, Tamil Nadu, India
MXC7+PVF, Virudhunagar, Tamil Nadu 626001, India
Lat 9.67164°
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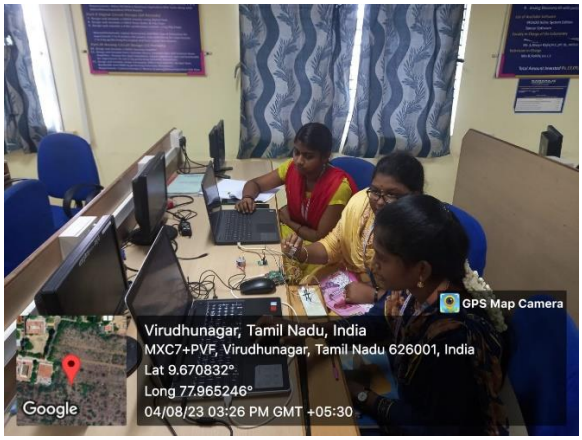
Google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MXC7+PVF, Virudhunagar, Tamil Nadu 626001, India
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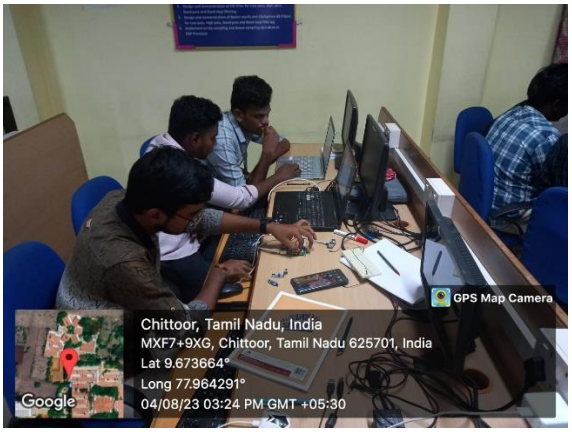
Google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MXF7+9XG, Chittoor, Tamil Nadu 625701, India
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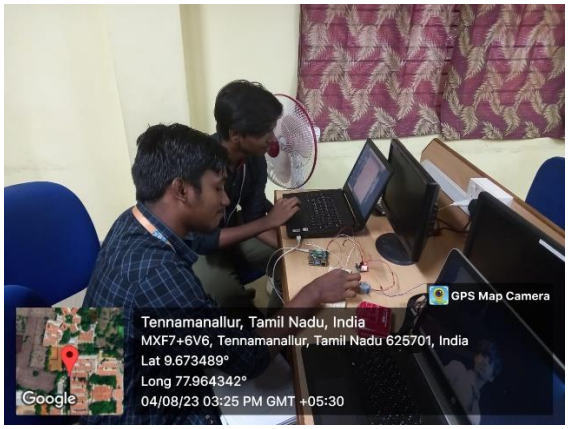
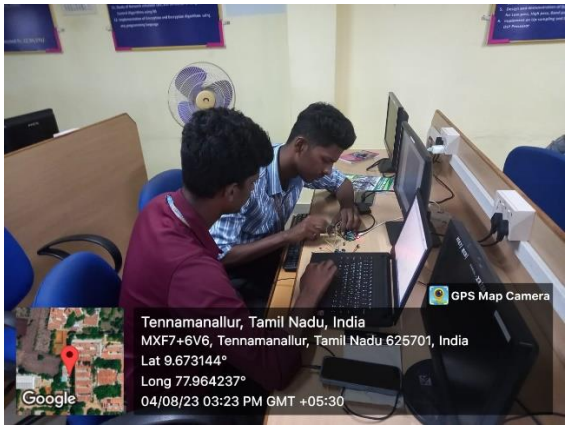
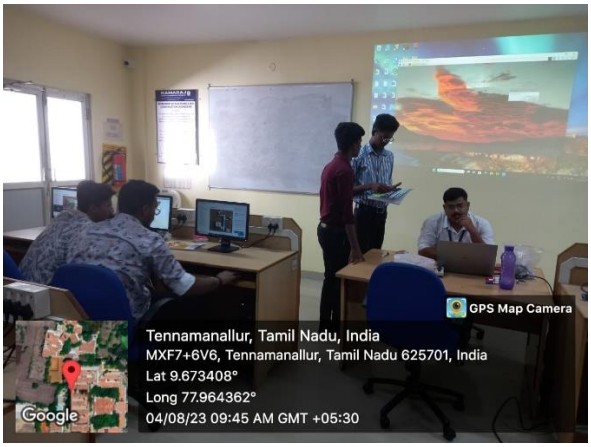
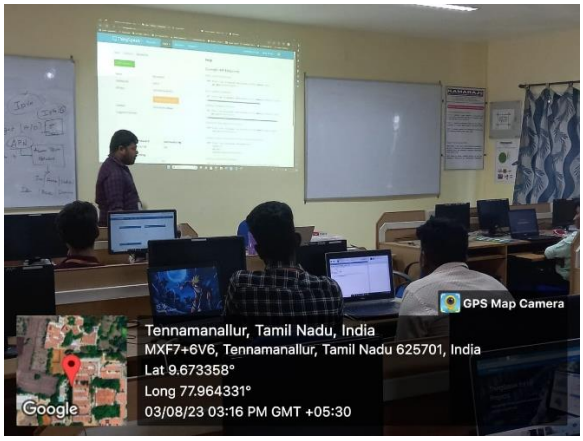
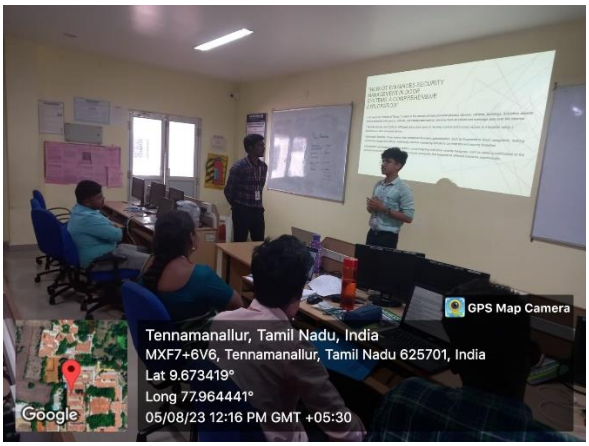


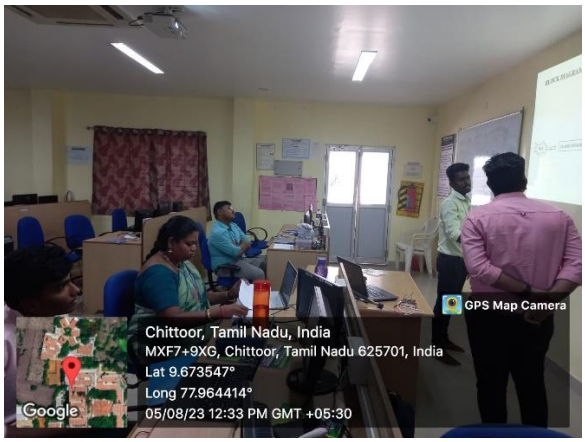


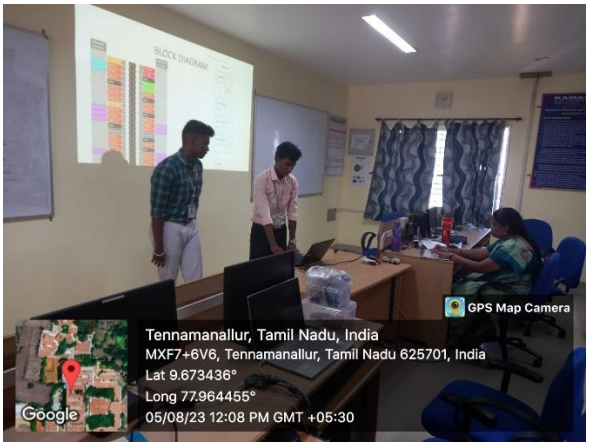




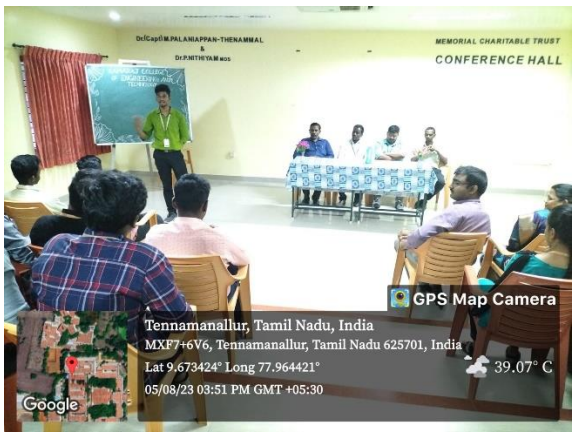
Project Presentation (Resource Person and Course Incharge)



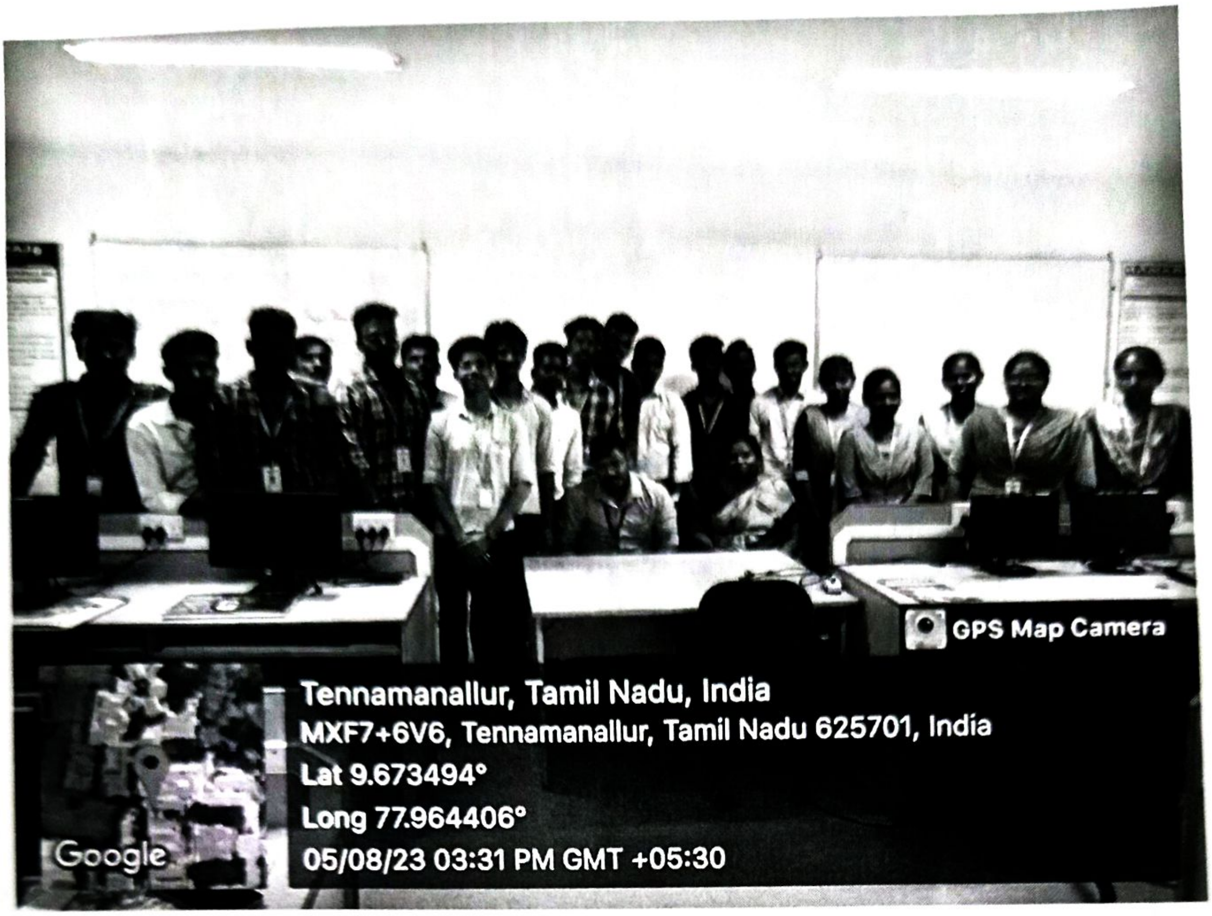




Valedictory Function and Feedback Session Oral



Group Photo



T. Aarthi
VAC coordinator

HOD/ECE

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Department Electronics and Communication Engineering

Value Added Course on IoT Application Design using Raspberry Pi and Python

Event Date: 31.07.2023 to 05.08.2023

Mark Statement

Department: ECE
Year: III

Regulation: 2021
Semester: V

Sl. No	Roll No.	Reg. No.	Student Name	Internal Marks (40)	External Marks (60)	Total (100)
1.	21UEC009	920421106040	SATHISH KUMAR BALAJI.R	36	37	73
2.	21UEC013	920421106032	PUSHPARATHINA.R	36	40	76
3.	21UEC019	920421106004	ANUKARTHIGA.A	37	21	58
4.	21UEC020	920421106051	UVARAJ.A	37	31	68
5.	21UEC022	920421106054	YUVASHREE.V	36	25	61
6.	21UEC023	920421106017	KARUNESHVAR.M	35	37	72
7.	21UEC024	920421106031	PREMA.E	38	34	72
8.	21UEC028	920421106050	THANGAMAREESWARI.T	38	41	79
9.	21UEC029	920421106033	RAMAR.A	36	27	63
10.	21UEC030	920421106045	SOORYA NARAYANAN.S	37	36	73
11.	21UEC032	920421106015	JAYASURYA.S	38	28	66
12.	21UEC034	920421106036	RANJITH RAJ.L	36	39	75
13.	21UEC038	920421106025	NAVEEN.R	37	28	65
14.	21UEC039	920421106027	NOBLE RICHARD.L	34	37	71
15.	21UEC041	920421106047	SUKIS KRISHNA.P	34	32	66
16.	21UEC044	920421106044	SIYON.C	36	26	62
17.	21UEC048	920421106014	HASEEM ABU SHEIK.S	34	39	73
18.	21UEC051	920421106007	DHANUSH.R	35	57	92
19.	21UEC053	920421106041	SENTHIL MURUGAN.K	37	27	64
20.	21UEC059	920421106304	SRIKANTH.S	37	19	56

Signature with Seal
(Er.R.Jagadeswaran)

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This is to certify that Mr/ Ms Sathish Kumar Balaji.R

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Exam Score : 73

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Exam Score : 68

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This is to certify that Mr/ Ms Thangamareeswari.T

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This is to certify that Mr/ Ms Ramar.A

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Exam Score : 63

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This is to certify that Mr/ Ms Soorya Narayanan S

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Exam Score : 73

V. Prakash

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This is to certify that Mr/ Ms Jayasurya.S

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Exam Score : 66

J. P

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Head - Enthu Academic Solutions

K. M

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This is to certify that Mr/ Ms Ranjith Raj.L

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This is to certify that Mr/ Ms Naveen.R

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Exam Score : 65

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This is to certify that Mr/ Ms Noble Richard. L

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This is to certify that Mr/ Ms Sukis Krishna.P

Department of Electronics and Communication Engineering successfully undergone 6 days of **Value Added Course on IoT Application Design using Raspberry Pi and Python** during **31.07.2023** to **05.08.2023** handled by **Enthu Technology Solutions India Pvt Ltd**, Coimbatore at Karmaraj College of Engineering and Technology (An Autonomous Insitution), K.Vellakulam, (Near Virudhunagar)

Exam Score : bb

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This is to certify that Mr/ Ms Siyon.C

Department of Electronics and Communication Engineering successfully undergone 6 days of **Value Added Course on IoT Application Design using Raspberry Pi and Python** during **31.07.2023** to **05.08.2023** handled by **Enthu Technology Solutions India Pvt Ltd**, Coimbatore at Karmaraj College of Engineering and Technology (An Autonomous Insitution), K.Vellakulam, (Near Virudhunagar)

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This is to certify that Mr/ Ms Haseem Abu Sheik. S

Department of Electronics and Communication Engineering successfully undergone 6 days of **Value Added Course on IoT Application Design using Raspberry Pi and Python** during **31.07.2023** to **05.08.2023** handled by **Enthu Technology Solutions India Pvt Ltd**, Coimbatore at Karmaraj College of Engineering and Technology (An Autonomous Insitution), K.Vellakulam, (Near Virudhunagar)

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This is to certify that Mr/ Ms Dhanush.R

Department of Electronics and Communication Engineering successfully undergone 6 days of **Value Added Course on IoT Application Design using Raspberry Pi and Python** during **31.07.2023** to **05.08.2023** handled by **Enthu Technology Solutions India Pvt Ltd**, Coimbatore at Karmaraj College of Engineering and Technology (An Autonomous Insitution), K.Vellakulam, (Near Virudhunagar)

Exam Score : 92

Mr. Prakash V. Anandan
Head - Enthu Academic Solutions

Mr. Moorthi Kanagaraj
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This is to certify that Mr/ Ms Senthil Murugan. K

Department of Electronics and Communication Engineering successfully undergone 6 days of **Value Added Course on IoT Application Design using Raspberry Pi and Python** during **31.07.2023** to **05.08.2023** handled by **Enthu Technology Solutions India Pvt Ltd**, Coimbatore at Karmaraj College of Engineering and Technology (An Autonomous Insitution), K.Vellakulam, (Near Virudhunagar)

Exam Score : 64

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This is to certify that Mr/ Ms Srikanth.S

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Exam Score : 56

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S.P.G.C. Nagar, K.Vellakulam – 625 701 (Near VIRUDHUNAGAR)

Department of Electronics and Communication Engineering

Value Added Course on IoT Application Design using Raspberry Pi and Python

31/06/2023 to 05/07/2023 (6 Days)

ATTENDANCE

S. No.	Roll Number	Name of the Student	31/07 (FN)	31/07 (AN)	01/08 (FN)	01/08 (AN)	02/08 (FN)	02/08 (AN)	03/08 (FN)	03/08 (AN)	04/08 (FN)	04/08 (AN)	05/08 (FN)	05/08 (AN)
1	21UEC009	SATHISH KUMAR BALAJI.R			balaji	balaji	balaji	balaji	balaji	balaji		balaji	balaji	balaji
2	21UEC013	PUSHPARATHINA.R												
3	21UEC019	ANUKARTHIGA.A												
4	21UEC020	UVARAJ.A												
5	21UEC022	YUVASHREE.V												
6	21UEC023	KARUNESHVAR.M												
7	21UEC024	PREMA.E												
8	21UEC028	THANGAMAREESWARI.T												
9	21UEC029	RAMAR.A							AB					
10	21UEC030	SOORYA NARAYANAN.S												
11	21UEC032	JAYASURYA.S												
12	21UEC034	RANJITH RAJ.L												
13	21UEC038	NAVEEN.R												
14	21UEC039	NOBLE RICHARD.L												

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15	21UEC041	SUKIS KRISHNA.P												
16	21UEC044	SIYON.C												
17	21UEC048	HASEEM ABU SHEIK.S												
18	21UEC051	DHANUSH.R												
19	21UEC053	SENTHIL MURUGAN.K												
20	21UEC059	SRIKANTH.S												

T. Pa

Coordinator

HoD/ECE

ID	Start time	Completion time	Email	Name	Total points	What do we use TV / Monitor to Rpi 4?	Points - What do we use TV / Monitor to Rpi 4?	How does power supply to Rpi 4?	Points - How does power supply to Rpi 4?	Which instruction set used in architecture is used in Rpi	Points - Which instruction set used in architecture is used in Rpi
1	8-5-23 14:42:46	8-5-23 14:50:46	21uec039@kamarajengg.edu.in	NOBLE RICHARD.L	37	Male Micro HDMI to Male HDMI	1	USB connector	1	ARM	1
2	8-5-23 14:47:48	8-5-23 14:55:26	21uec048@kamarajengg.edu.in	HASEEM ABU SHEIK.S	39	HDMI to VGA	0	USB connector	1	MSP	0
3	8-5-23 14:42:25	8-5-23 14:57:17	21uec044@kamarajengg.edu.in	SIYON.C	26	HDMI to VGA	0	USB connector	1	ARM	1
4	8-5-23 14:38:21	8-5-23 14:57:26	21uec009@kamarajengg.edu.in	SATHISH KUMAR BALAJI.R	37	HDMI to VGA	0	USB connector	1	ARM	1
5	8-5-23 14:43:42	8-5-23 14:57:42	21uec038@kamarajengg.edu.in	NAVEEN.R	28	Male Micro HDMI to Male HDMI	1	USB connector	1	MSP	0
6	8-5-23 14:39:25	8-5-23 14:57:52	21uec024@kamarajengg.edu.in	PREMA.E	34	Female HDMI to Male HDMI	0	USB connector	1	ARM	1
7	8-5-23 14:38:10	8-5-23 15:00:44	21uec030@kamarajengg.edu.in	SOORYA NARAYANAN.S	36	HDMI to VGA	0	USB connector	1	ARM	1
8	8-5-23 14:47:49	8-5-23 15:03:13	21uec059@kamarajengg.edu.in	SRIKANTH.S	19		0	USB connector	1		0

9	8-5-23 14:39:22	8-5-23 15:04:38	21uec028@kamarajengg.edu.in	THANGAMAREESWARI.T	41	Male Micro HDMI to Male HDMI	1	Adapter	0	ARM	1
10	8-5-23 14:39:08	8-5-23 15:06:50	21uec032@kamarajengg.edu.in	JAYASURYA.S	28	HDMI to VGA	0	USB connector	1	MSP	0
11	8-5-23 14:39:39	8-5-23 15:09:15	21uec034@kamarajengg.edu.in	RANJITH RAJ.L	39	Male Micro HDMI to Male HDMI	1	USB connector	1	ARM	1
12	8-5-23 14:38:21	8-5-23 15:09:45	21uec023@kamarajengg.edu.in	KARUNESHVAR.M	37	Male Micro HDMI to Male HDMI	1	USB connector	1	ARM	1
13	8-5-23 14:43:56	8-5-23 15:13:20	21uec041@kamarajengg.edu.in	SUKIS KRISHNA.P	32	HDMI to VGA	0	Adapter	0	AVR	0
14	8-5-23 14:40:41	8-5-23 15:13:56	21uec020@kamarajengg.edu.in	UVARAJ.A	31	Male Micro HDMI to Male HDMI	1	USB connector	1	ARM	1
15	8-5-23 14:40:37	8-5-23 15:14:02	21uec013@kamarajengg.edu.in	PUSHPARATHINA.R	40	HDMI to VGA	0	USB connector	1	MSP	0
16	8-5-23 14:40:40	8-5-23 15:14:04	21uec053@kamarajengg.edu.in	SENTHIL MURUGAN.K	27	HDMI to VGA	0	USB connector	1	ARM	1
17	8-5-23 15:12:06	8-5-23 15:15:41	21uec051@kamarajengg.edu.in	DHANUSH.R	57	Male Micro HDMI to Male HDMI	1	USB connector	1	ARM	1
18	8-5-23 14:38:49	8-5-23 15:16:01	21uec029@kamarajengg.edu.in	RAMAR.A	27	HDMI to VGA	0	Charger	0	ARM	1
19	8-5-23 14:43:36	8-5-23 15:16:13	21uec022@kamarajengg.edu.in	YUVASHREE.V	25	HDMI to VGA	0	Charger	0	ARM	1
20	7-27-23 16:16:41	8-5-23 15:20:21	21uec019@kamarajengg.edu.in	ANUKARTHIGA.A	21	Male Micro HDMI to Male HDMI	1	Charger	0	ARM	1

What is the speed of Operation in Rpi 4	Points - What is the speed of Operation in Rpi 4	What bit is Processor is used in Rpi 4?	Points - What bit is Processor is used in Rpi 4?	In which one of the following is used for multitasking?	Points - In which one of the following is used for multitasking?	What are the advantages of raspberry pi?	Points - What are the advantages of raspberry pi?	How many GPIO pins does raspberry pi model B+ have?	Points - How many GPIO pins does raspberry pi model B+ have?	The speed of raspberry pi 4 model B is	Points - The speed of raspberry pi 4 model B is	What are the capabilities of raspberry pi?	Points - What are the capabilities of raspberry pi?	In which pin hardware pulse width modulation will not be available?	Points - In which pin hardware pulse width modulation will not be available?
1.5GHz	1	64 Bit	0	Raspberry pi model	1	Both a and b	1	40	1	1000MHz	0	All of the above	1	GPIO 12 & GPIO 13	0
2.4GHz	0	32 Bit	0	Both a and b	0	Consumes less power	0	40	1	1500MHz	1	Browsing the internet	0	Both a and b	0
1.5GHz	1	64 Bit	0	Both a and b	0	None of the above	0	40	1	1500MHz	1	Browsing the internet	0	GPIO 18 & GPIO 19	0
1.5GHz	1	64 Bit	0	Raspberry pi model	1	Both a and b	1	40	1	1500MHz	1	All of the above	1	GPIO 18 & GPIO 19	0
2.4GHz	0	None of these	0	Raspberry pi model	1	Consumes less power	0	12	0	2000MHz	0	All of the above	1	Both a and b	0
1.2GHz	0	32 and 64 Bit	1	Both a and b	0	Consumes less power	0	25	0	1500MHz	1	Browsing the internet	0	GPIO 18 & GPIO 19	0
1.5GHz	1	64 Bit	0	Raspberry pi model	1	Low-cost	0	40	1	1000MHz	0	All of the above	1	GPIO 12 & GPIO 13	0
2.4GHz	0		0	Both a and b	0	Low-cost	0	40	1		0	Browsing the internet	0	GPIO 12 & GPIO 13	0

1.5GHz	1	64 Bit	0	Both a and b	0	Both a and b	1	40	1	1000MHz	0	All of the above	1	Both a and b	0
2.4GHz	0	None of these	0	Raspberry pi model	1	Consumes less power	0	40	1	2000MHz	0	Making spreadsheets	0	None of the above	2
1.5GHz	1	64 Bit	0	Raspberry pi model	1	Low-cost	0	40	1	1000MHz	0	All of the above	1	GPIO 12 & GPIO 13	0
1.5GHz	1	64 Bit	0	Raspberry pi model	1	Both a and b	1	40	1	1000MHz	0	All of the above	1	Both a and b	0
2.4GHz	0	64 Bit	0	Raspberry pi model	1	Low-cost	0	40	1	1500MHz	1	Browsing the internet	0	GPIO 18 & GPIO 19	0
1.5GHz	1	64 Bit	0	Raspberry pi model	1	Consumes less power	0	25	0	1000MHz	0	All of the above	1	GPIO 18 & GPIO 19	0
2.4GHz	0	32 and 64 Bit	1	Both a and b	0	Both a and b	1	40	1	1000MHz	0	All of the above	1	None of the above	2
1.5GHz	1	64 Bit	0		0	Low-cost	0	40	1	1000MHz	0	All of the above	1	Both a and b	0
1.5GHz	1	32 and 64 Bit	1	Raspberry pi model	1	Both a and b	1	40	1	1500MHz	1	All of the above	1	None of the above	2
1.5GHz	1	32 Bit	0	Raspberry pi model	1	Consumes less power	0	40	1	1000MHz	0	Making spreadsheets	0	GPIO 12 & GPIO 13	0
1.5GHz	1	64 Bit	0	Both a and b	0	None of the above	0	40	1	1500MHz	1	Browsing the internet	0	GPIO 18 & GPIO 19	0
1.5GHz	1	32 Bit	0	Arduino Uno	0	Both a and b	1	40	1	1500MHz	1	All of the above	1	Both a and b	0

What is the standard form of SPI pin?	Points - What is the standard form of SPI pin?	What is the standard form of MISO pin	Points - What is the standard form of MISO pin	The I2C pin on the raspberry pi board has _____ connections	Points - The I2C pin on the raspberry pi board has _____ connections	_____ pins are the EEPROM pins on raspberry pi 3 model B	Points - _____ pins are the EEPROM pins on raspberry pi 3 model B	Which one of the following is a microcontroller?	Points - Which one of the following is a microcontroller?	Which one of the following is a microcomputer?	Points - Which one of the following is a microcomputer?
Serial Peripheral Interface	1	Memory Input Slave Output	0	Two	2	Both a and b	2	Both a and b	0	Raspberry pi	2
Serial Peripheral Interface	1	Master In Slave Out	1	Two	2	Both a and b	2	Both a and b	0	Raspberry pi	2
Serial Parallel Interfacing	0	Master In Slave Out	1	Two	2	GPIO 1	0	Arduino	2	None of the above	0
Serial Parallel Input	0	Master In Slave Out	1	Two	2	GPIO 4	0	Arduino	2	Raspberry pi	2
Serial Peripheral Interface	1	Master In Slave Out	1	Two	2	GPIO 4	0	Raspberry pi	0	Raspberry pi	2
Serial Peripheral Interface	1	Master In Slave Out	1	Two	2	Both a and b	2	Arduino	2	Raspberry pi	2
Serial Parallel Interfacing	0	Master In Slave Out	1	Two	2		0	Arduino	2	Raspberry pi	2
Serial Peripheral Interface	1	Master In Slave Out	1		0	GPIO 1	0	Raspberry pi	0	Raspberry pi	2

Serial Peripheral Interface	1	Master In Slave Out	1	Two	2	Both a and b	2	Both a and b	0	Raspberry pi	2
Serial Peripheral Interface	1	Master In Slave Out	1	Two	2	GPIO 4	0	Arduino	2	Raspberry pi	2
Serial Parallel Interfacing	0	Master In Slave Out	1	Three	0	Both a and b	2	Arduino	2	Raspberry pi	2
Serial Peripheral Interface	1	Master In Slave Out	1	Two	2	Both a and b	2	Both a and b	0	None of the above	0
Serial Parallel Input	0	Master In Slave Out	1	One	0	GPIO 4	0	Raspberry pi	0	Raspberry pi	2
Serial Peripheral Interface	1	Master In Slave Out	1	Two	2	GPIO 1	0	Arduino	2	Raspberry pi	2
Serial Peripheral Interface	1	Master In Slave Out	1	Three	0	Both a and b	2	Both a and b	0	Raspberry pi	2
Serial Peripheral Interface	1	Master In Slave Out	1	One	0	GPIO 1	0	Both a and b	0	Raspberry pi	2
Serial Peripheral Interface	1	Master In Slave Out	1	Two	2	Both a and b	2	Arduino	2	Raspberry pi	2
Serial Peripheral Interface	1	Memory Input Slave Output	0	One	0	GPIO 0	0	Both a and b	0	Raspberry pi	2
Serial Parallel Interfacing	0	Master In Slave Out	1	Two	2	GPIO 1	0	Arduino	2	None of the above	0
Serial Peripheral Interface	1	Master Out Slave In	0	Two	2	GPIO 1	0	Raspberry pi	0	Arduino	0

Which one of the following has both I2C and SPI buses?	Points - Which one of the following has both I2C and SPI buses?	The raspberry pi has _____	Points - The raspberry pi has _____ –	In how many volts does raspberry pi runs?	Points - In how many volts does raspberry pi runs?	How many analog static RAM inputs does raspberry pi have?	Points - How many analog static RAM inputs does raspberry pi have?	Which command is used to change the directory?	Points - Which command is used to change the directory?	What is the purpose of the ifconfig command?	Points - What is the purpose of the ifconfig command?	Which one of the following is an open-source?	Points - Which one of the following is an open-source?	How much power does raspberry pi model B+ consume?
Raspberry pi	0	Digital I/O	2	5V	1		0	cd	2	Shows OS information	0	Linux	1	3.5W
Raspberry pi	0	Digital I/O	2	5V	1	0	1	cd	2	Used to get the network information	2	Linux	1	3.5W
Raspberry pi	0	Analog inputs	0	5V	1	40	0	cd	2	Used to get the network information	2	Linux	1	2W
Raspberry pi	0	Digital I/O	2	5V	1	0	1	pwd	0	Shows OS information	0	FreeBSD	0	3.5W
Raspberry pi	0	All of the above	0	5V	1	20	0	cd	2	Used to get the network information	2	Linux	1	3.5W
Both a and b	2	Digital I/O	2	5V	1	20	0	cd	2	Shows OS information	0	Linux	1	3.5W
Raspberry pi	0	Digital I/O	2	5V	1	0	1	cd	2	Shows OS information	0	Linux	1	1W
None of the above	0	Digital I/O	2	12V	0	40	0	cd	2		0	Windows	0	2W

Both a and b	2	Digital I/O	2	5V	1	0	1	cd	2	Used to get the network information	2	Linux	1	1W
Raspberry pi	0	Digital I/O	2	5V	1	40	0	cd	2	Shows OS information	0	Linux	1	
Raspberry pi	0	Digital I/O	2	5V	1	0	1	cd	2	Used to get the network information	2	FreeBSD	0	1W
Both a and b	2	Digital I/O	2	5V	1	0	1	None of the above	0	Used to get the network information	2	Linux	1	1W
Both a and b	2	Digital I/O	2	5V	1	0	1	cd	2	Shows OS information	0	Linux	1	3.5W
Raspberry pi	0	Digital I/O	2	5V	1	40	0	pwd	0	Used to get the network information	2	FreeBSD	0	1W
Raspberry pi	0	Digital I/O	2	5V	1	0	1	cd	2	Used to get the network information	2	Linux	1	2W
Both a and b	2	All of the above	0	1V	0	0	1	cd	2	Shows past commands	0	Linux	1	4W
Both a and b	2	Digital I/O	2	5V	1	0	1	cd	2	Used to get the network information	2	Linux	1	3.5W
Arduino	0	Digital I/O	2	5V	1	20	0	cd	2	Used to get the network information	2	None of the above	0	4W
Raspberry pi	0	Analog inputs	0	5V	1	40	0	cd	2	Used to get the network information	2	Linux	1	2W
Raspberry pi	0	Analog outputs	0	5V	1	20	0	cd	2	Shows past commands	0	Linux	1	1W

Points - How much power does raspberry pi model B+ consume?	Which command shows bootup messages?	Points - Which command shows bootup messages?	Which command comes under raspberry pi terminal commands?	Points - Which command comes under raspberry pi terminal commands?	Which command is used to remove the directory?	Points - Which command is used to remove the directory?	Which command is used to create a new directory?	Points - Which command is used to create a new directory?	What is the standard form of CSI?	Points - What is the standard form of CSI?	What is the default Raspbian desktop sharing system to connect to RPi?	Points - What is the default Raspbian desktop sharing system to connect to RPi?	What is the RPi SoC manufacturer?	Points - What is the RPi SoC manufacturer?	What is the standard form of DSI?	Points - What is the standard form of DSI?
2	dmesg	2	All of the above	1	ssh	0	mkdir	1	Common Serial Interface	0	VNC	1	Broadcom	1	Digital Serial Interface	0
2	None of the above	0	ssh	0	rmdir	1	mkdir	1	Camera Serial Interface	2	VNC	1	Broadcom	1	Display Serial Interface	1
0	dmesg	2	rm	0	rmdir	1	mkdir	1	Camera Serial Interface	2	Remote Desktop	0	Broadcom	1	Display Serial Interface	1
2	dmesg	2	ssh	0	rmdir	1	mkdir	1	Camera Serial Interface	2	VNC	1	Broadcom	1	Display Serial Interface	1
2	None of the above	0		0		0	ssh	0	Camera Serial Interface	2	VNC	1	Broadcom	1	Digital/Display Serial Interface	0
2	dmesg	2	All of the above	1	rmdir	1	mkdir	1	Camera Serial Interface	2	VNC	1	Broadcom	1	Digital Serial Interface	0
0	dmesg	2	All of the above	1	rmdir	1	mkdir	1	Camera Serial Interface	2	VNC	1	Broadcom	1	Digital Serial Interface	0
0	free-h	0	rm	0	mkdir	0	ssh	0	Camera Serial Interface	2	VNC	1	Broadcom	1	Display Serial Interface	1

0	dmesg	2	All of the above	1	rm	0	ssh	0	Camera Serial Interface	2	VNC	1	Broadcom	1	Display Serial Interface	1
0	dmesg	2	ssh	0	rmdir	1	ssh	0	Camera Serial Interface	2	VNC	1	MediaTek	0	Digital Serial Interface	0
0	dmesg	2	All of the above	1	rmdir	1	mkdir	1	Camera Serial Interface	2	VNC	1	Broadcom	1	Display Serial Interface	1
0	dmesg	2	All of the above	1	rmdir	1	mkdir	1	Camera Serial Interface	2	VNC	1	Broadcom	1	Digital Serial Interface	0
2	dmesg	2	All of the above	1	rmdir	1	mkdir	1	None of the above	0	Remote Desktop	0	Broadcom	1	Display Serial Interface	1
0	dmesg	2	All of the above	1	rmdir	1	mkdir	1	Common Serial Interface	0	VNC	1	Broadcom	1	Digital Serial Interface	0
0	dmesg	2	All of the above	1	rmdir	1	mkdir	1	Camera Serial Interface	2	VNC	1	Broadcom	1	Digital/Display Serial Interface	0
0	dmesg	2	ssh	0	ssh	0	mkdir	1	None of the above	0	Remote Desktop	0	Broadcom	1	Display Serial Interface	1
2	dmesg	2	All of the above	1	rmdir	1	mkdir	1	Camera Serial Interface	2	VNC	1	Broadcom	1	Display Serial Interface	1
0	dmesg	2	All of the above	1	rmdir	1	rm	0	Complex Serial Interface	0	VNC	1	Broadcom	1	Display Serial Interface	1
0	dmesg	2	rm	0	rmdir	1	mkdir	1	Camera Serial Interface	2	Remote Desktop	0	Broadcom	1	Display Serial Interface	1
0	free-h	0	All of the above	1	ssh	0		0	Common Serial Interface	0	Remote Desktop	0	Broadcom	1	Digital Serial Interface	0

What is the standard form of HDMI?	Points - What is the standard form of HDMI?	The Raspberry Pi has a _____ interface to allow it to perform serial data communication	Points - The Raspberry Pi has a _____ interface to allow it to perform serial data communications	Which instruction set is used in Raspberry Pi?	Points - Which instruction set is used in Raspberry Pi?	Data collected by Raspberry Pi from the sensor can be	Points - Data collected by Raspberry Pi from the sensor can be	Raspbian is _____	Points - Raspbian is _____	What are the disadvantages of raspberry pi?	Points - What are the disadvantages of raspberry pi?	How can you check your RPi revision info?	Points - How can you check your RPi revision info?	What is the Ethernet/LAN cable used in RPi?
High Definition Multimedia Interface	1	GPIO	0	None of these mentioned	0	All of the above	2	OS	1	Slow and bad for larger tasks	2	all true	1	Cat5
High Definition Multimedia Interface	1	SPI	0	MIPS	2	All of the above	2	OS	1	Slow and bad for larger tasks	2	all true	1	Cat5e
High Definition Multimedia Interface	1	GPIO	0	None of these mentioned	0	Sent to other devices connected to the network	0	Compiler	0	Not ideal for multitasking	0	cat /proc/cpuinfo	0	Cat5
High Definition Multimedia Interface	1	I2C	0	None of these mentioned	0	All of the above	2	OS	1	Slow and bad for larger tasks	2	cat /proc/cpuinfo	0	Cat6
High Definition Multimedia Interface	1	SPI	0	RISC	0	Used to control/activate other devices in the network	0	OS	1	Slow and bad for larger tasks	2	cat /proc/cpuinfo	0	Cat5e
High Description Multimedia Interface	0	GPIO	0	CISC	0	Processed in Raspberry Pi	0	Assembler	0	Limited functions	0	check mounting holes	0	Cat6
High Definition Multimedia Interface	1	UART	1	None of these mentioned	0	Processed in Raspberry Pi	0	OS	1	All of the above	0	cat /proc/cpuinfo	0	Cat5e
High Display Multimedia Interface	0	UART	1	CISC	0	Sent to other devices connected to the network	0	Assembler	0	Slow and bad for larger tasks	2	check mounting holes	0	

High Description Multimedia Interface	0	GPIO	0	None of these mentioned	0	All of the above	2	Assembler	0	Slow and bad for larger tasks	2	all true	1	Cat6
High Definition Multimedia Interface	1	GPIO	0	RISC	0	Used to control/activate other devices in the network	0	OS	1	Limited functions	0	cat /proc/device-tree/model	0	Cat5
High Definition Multimedia Interface	1	UART	1	None of these mentioned	0	Processed in Raspberry Pi	0	OS	1	All of the above	0	all true	1	Cat5
High Definition Multimedia Interface	1	GPIO	0	None of these mentioned	0	All of the above	2	Assembler	0	All of the above	0	all true	1	Cat6
High Definition Multimedia Interface	1	SPI	0	None of these mentioned	0	All of the above	2	OS	1	Slow and bad for larger tasks	2	cat /proc/cpuinfo	0	RJ45
High Description Multimedia Interface	0	SPI	0	None of these mentioned	0	All of the above	2	OS	1	Limited functions	0	cat /proc/cpuinfo	0	Cat5e
High Definition Multimedia Interface	1	SPI	0	CISC	0	All of the above	2	Language	0	Slow and bad for larger tasks	2	cat /proc/cpuinfo	0	RJ45
High Definition Multimedia Interface	1	SPI	0	None of these mentioned	0	All of the above	2	OS	1	Limited functions	0	cat /proc/cpuinfo	0	RJ45
High Definition Multimedia Interface	1	UART	1	MIPS	2	All of the above	2	OS	1	Slow and bad for larger tasks	2	all true	1	Cat6
High Definition Multimedia Interface	1	UART	1	CISC	0	All of the above	2	OS	1	Limited functions	0	cat /proc/device-tree/model	0	Cat5e
High Definition Multimedia Interface	1	GPIO	0	None of these mentioned	0	Sent to other devices connected to the network	0	Compiler	0	Not ideal for multitasking	0	cat /proc/cpuinfo	0	Cat5
High Definition Multimedia Interface	1	UART	1	None of these mentioned	0	Sent to other devices connected to the network	0	OS	1	Slow and bad for larger tasks	2	cat /proc/cpuinfo	0	Cat5

Points - What is the Ethernet/LAN cable used in RPi?	WiFi is not present in which of the following models?	Points - WiFi is not present in which of the following models?	What are the parameters that are default values?	Points - What are the parameters that are default values?	Which sensor is Analog Sensor	Points - Which sensor is Analog Sensor	Automatic Street Light System- SESNOR	Points - Automatic Street Light System- SESNOR
0	None of these	0	Stop bit and Flow Control	0	Soil Moisture Sensor	1	LDR Sensor, Relay with Street Light	0
0	Raspberry pi Zero	1	Port_Name and Bits	0	Pir Sensor	0	LDR Sensor, Relay with Street Light	0
0	Raspberry pi Zero	1	Speed and Parity	0	Ultrasonic Sensor	0	LDR Sensor, Relay with Street Light	0
0	Raspberry pi Zero	1	Stop bit and Flow Control	0	IR Sensor	0	LDR Sensor, Relay with Street Light	0
0	Raspberry pi Zero	1	Stop bit and Flow Control	0	Ultrasonic Sensor	0	Both a and b	1
0	Raspberry pi Zero	1	Port_Name and Bits	0	Pir Sensor	0	LDR Sensor, Relay with Street Light	0
0	Raspberry pi Zero	1	Speed and Port_Names	1	Soil Moisture Sensor	1	Both a and b	1
0	Raspberry pi Zero	1	Port_Name and Bits	0	Ultrasonic Sensor	0	LDR Sensor, Relay with Street Light	0

0	Raspberry pi Zero	1	Port_Name and Bits	0	Soil Moisture Sensor	1	Both a and b	1
0	Raspberry pi Zero	1	Port_Name and Bits	0	IR Sensor	0	LDR Sensor, Relay with Street Light	0
0	Raspberry pi Zero	1	Speed and Port_Names	1	Soil Moisture Sensor	1	LDR Sensor, Relay with Street Light	0
0	None of these	0	Port_Name and Bits	0	Pir Sensor	0	Both a and b	1
1	Raspberry pi Zero	1	Speed and Parity	0	Pir Sensor	0	LDR Sensor, Relay with Street Light	0
0	Raspberry pi Zero	1	Stop bit and Flow Control	0	Soil Moisture Sensor	1	LDR Sensor, Relay with Street Light	0
1	Raspberry pi Zero	1	Speed and Port_Names	1	Soil Moisture Sensor	1	LDR Sensor, Relay with Street Light	0
1	Raspberry pi 3	0	Speed and Port_Names	1	Soil Moisture Sensor	1	LDR Sensor, Relay with Street Light	0
0	Raspberry pi Zero	1	Speed and Parity	0	Pir Sensor	0	Both a and b	1
0	Raspberry pi Zero	1	Port_Name and Bits	0	Ultrasonic Sensor	0	LDR Sensor, Relay with Street Light	0
0	Raspberry pi Zero	1	Speed and Parity	0	Ultrasonic Sensor	0	LDR Sensor, Relay with Street Light	0
0	None of these	0	Speed and Parity	0	Ultrasonic Sensor	0	LDR Sensor, Relay with Street Light	0

T. Rama
VAC Coordinator

N.J
HOD/ECE

MCQ test - Value added Course on IoT Application Design using Raspberry Pi and Python

(31.07.2023 to 05.08.2023) - 2023 - 2024 ODD Semester - III ECE (V Semester)

Hi, Prathiba. When you submit this form, the owner will see your name and email address.

1. What do we use TV / Monitor to Rpi 4? (1 Point)

- ◯ HDMI to VGA
- ◯ Female HDMI to Male HDMI
- ◯ Male Micro HDMI to Male HDMI
- ◯ Female VGA to Male VGA

2. How does power supply to Rpi 4? (1 Point)

- ◯ Charger
- ◯ Adapter
- ◯ USB connector

- ◯ Battery

3. Which instruction set used in architecture is used in Rpi (1 Point)

- ◯ X86
- ◯ MSP
- ◯ AVR
- ◯ ARM

4. What is the speed of Operation in Rpi 4 (1 Point)

- ◯ 1.5GHz
- ◯ 1.2GHz
- ◯ 1GHz
- ◯ 2.4GHz

5. What bit is Processor is used in Rpi 4? (1 Point)

- ◯ 32 Bit
- ◯ 64 Bit
- ◯ 32 and 64 Bit
- ◯ None of these

6. In which one of the following is used for multitasking? (1 Point)

- ◯ Raspberry pi model

- Arduino Uno
- Both a and b
- None of these

7. What are the advantages of raspberry pi? (1 Point)

- Consumes less power
- Low-cost
- Both a and b
- None of the above

8. How many GPIO pins does raspberry pi model B+ have? (1 Point)

- 7
- 12
- 25
- 40

9. The speed of raspberry pi 4 model B is (1 Point)

- 1000MHz
- 1500MHz
- 2000MHz
- 4000MHz

10. What are the capabilities of raspberry pi? (1 Point)

- Browsing the internet
- Making spreadsheets
- Word pressing
- All of the above

11. In which pin hardware pulse width modulation will not be available? (2 Points)

- GPIO 12 & GPIO 13
- GPIO 18 & GPIO 19
- Both a and b
- None of the above

12. What is the standard form of SPI pin? (1 Point)

- Serial Parallel Input
- Serial Peripheral Interface
- Serial Parallel Interfacing
- None of the above

13. What is the standard form of MISO pin (1 Point)

- Master In Slave Out
- Memory Input Slave Output

- ◯ Master Out Slave In
- ◯ None of the above

14. The I2C pin on the raspberry pi board has _____ connections (2 Points)

- ◯ One
- ◯ Two
- ◯ Three
- ◯ Four

15. _____ pins are the EEPROM pins on raspberry pi 3 model B (2 Points)

- ◯ GPIO 0
- ◯ GPIO 1
- ◯ Both a and b
- ◯ GPIO 4

16. Which one of the following is a microcontroller? (2 Points)

- ◯ Arduino
- ◯ Raspberry pi
- ◯ Both a and b
- ◯ None of the above

17. Which one of the following is a microcomputer? (2 Points)

- Arduino
- Raspberry pi
- Both a and b
- None of the above

18. Which one of the following has both I2C and SPI buses? (2 Points)

- Arduino
- Raspberry pi
- Both a and b
- None of the above

19. The raspberry pi has _____ (2 Points)

- Digital I/O
- Analog inputs
- Analog outputs
- All of the above

20. In how many volts does raspberry pi runs? (1 Point)

- 1V
- 2V

- ◯ 5V
- ◯ 12V

21. How many analog static RAM inputs does raspberry pi have? (1 Point)

- ◯ 20
- ◯ 26
- ◯ 40
- ◯ 0

22. Which command is used to change the directory? (2 Points)

- ◯ cd
- ◯ pwd
- ◯ ls
- ◯ None of the above

23. What is the purpose of the ifconfig command? (2 Points)

- ◯ Shows OS information
- ◯ Shows past commands
- ◯ Change the permission of the directory/file
- ◯ Used to get the network information

24. Which one of the following is an open-source? (1 Point)

- Windows
- Linux
- FreeBSD
- None of the above

25. How much power does raspberry pi model B+ consume? (2 Points)

- 1W
- 2W
- 3.5W
- 4W

26. Which command shows bootup messages? (2 Points)

- dmesg
- free-h
- lshw
- None of the above

27. Which command comes under raspberry pi terminal commands? (1 Point)

- ssh
- mkdir
- rm

- ◯ All of the above

28. Which command is used to remove the directory? (1 Point)

- ◯ ssh
- ◯ mkdir
- ◯ rm
- ◯ rmdir

29. Which command is used to create a new directory? (1 Point)

- ◯ ssh
- ◯ mkdir
- ◯ rm
- ◯ rmdir

30. What is the standard form of CSI? (2 Points)

- ◯ Camera Serial Interface
- ◯ Common Serial Interface
- ◯ Complex Serial Interface
- ◯ None of the above

31. What is the default Raspbian desktop sharing system to connect to RPi? (1 Point)

- ◯ Remote Desktop
- ◯ VNC
- ◯ Teamviewer
- ◯ ARD

32. What is the RPi SoC manufacturer? (1 Point)

- ◯ Broadcom
- ◯ Samsung
- ◯ MediaTek
- ◯ Qualcomm

33. What is the standard form of DSI? (1 Point)

- ◯ Display Serial Interface
- ◯ Digital Serial Interface
- ◯ Digital/Display Serial Interface
- ◯ None of the above

34. What is the standard form of HDMI? (1 Point)

- ◯ High Definition Multimedia Interface
- ◯ High Display Multimedia Interface
- ◯ High Description Multimedia Interface

- ◯ None of the above

35. The Raspberry Pi has a _____ interface to allow it to perform serial data communications (1 Point)

- ◯ SPI
- ◯ UART
- ◯ GPIO
- ◯ I2C

36. Which instruction set is used in Raspberry Pi? (2 Points)

- ◯ CISC
- ◯ RISC
- ◯ MIPS
- ◯ None of these mentioned

37. Data collected by Raspberry Pi from the sensor can be (2 Points)

- ◯ Processed in Raspberry Pi
- ◯ Sent to other devices connected to the network
- ◯ Used to control/activate other devices in the network
- ◯ All of the above

38. Raspbian is _____ (1 Point)

- Assembler
- Language
- Compiler
- OS

39. What are the disadvantages of raspberry pi? (2 Points)

- Limited functions
- Not ideal for multitasking
- Slow and bad for larger tasks
- All of the above

40. How can you check your RPi revision info? (1 Point)

- check mounting holes
- cat /proc/device-tree/model
- cat /proc/cpuinfo
- all true

41. What is the Ethernet/LAN cable used in RPi? (1 Point)

- Cat5
- Cat5e
- Cat6

- ◯ RJ45

42. WiFi is not present in which of the following models? (1 Point)

- ◯ Raspberry pi 4
- ◯ Raspberry pi 3
- ◯ Raspberry pi Zero
- ◯ None of these

43. What are the parameters that are default values? (1 Point)

- ◯ Port_Name and Bits
- ◯ Speed and Port_Names
- ◯ Speed and Parity
- ◯ Stop bit and Flow Control

44. Which sensor is Analog Sensor (1 Point)

- ◯ Ultrasonic Sensor
- ◯ IR Sensor
- ◯ Pir Sensor
- ◯ Soil Moisture Sensor

45. Automatic Street Light System- SESNOR (1 Point)

- ◯ LDR Sensor, Relay with Street Light

- ◯ Lux Sensor, Relay with Street Light
- ◯ Both a and b
- ◯ None Of these

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T. Babu
VAC Coordinator

HOD/ECE

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COLLEGE OF ENGINEERING & TECHNOLOGY
(An Autonomous Institution - AFFILIATED TO ANNA UNIVERSITY, CHENNAI)
S.P.G. Chidambaram Nadar - K. Nagammal Campus
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Department of Electronics and Communication Engineering

Value Added Course on IoT Application Design using Raspberry Pi and Python

31/06/2023 to 05/07/2023 (6 Days)

Student Name List

S. No.	Roll Number	Name of the Student
1	21UEC009	SATHISH KUMAR BALAJI.R
2	21UEC013	PUSHPARATHINA.R
3	21UEC019	ANUKARTHIGA.A
4	21UEC020	UVARAJ.A
5	21UEC022	YUVASHREE.V
6	21UEC023	KARUNESHVAR.M
7	21UEC024	PREMA.E
8	21UEC028	THANGAMAREESWARI.T
9	21UEC029	RAMAR.A
10	21UEC030	SOORYA NARAYANAN.S
11	21UEC032	JAYASURYA.S
12	21UEC034	RANJITH RAJ.L
13	21UEC038	NAVEEN.R
14	21UEC039	NOBLE RICHARD.L
15	21UEC041	SUKIS KRISHNA.P
16	21UEC044	SIYON.C
17	21UEC048	HASEEM ABU SHEIK.S
18	21UEC051	DHANUSH.R
19	21UEC053	SENTHIL MURUGAN.K
20	21UEC059	SRIKANTH.S

Nam

T. Prathiba
Coordinators 22/7/23
Dr. T. Prathiba

22/7/23
HoD/ECE

MCQ test - Value added Course on IoT Application Design using Raspberry Pi and Python

20	32.3	Active
Responses	Average Score	Status

1. What do we use TV / Monitor to Rpi 4? (1 point)
   47% of respondents (9 of 19) answered this question correctly.

HDMI to VGA	9	
Female HDMI to Male HDMI	1	
Male Micro HDMI to Male HDMI	9	✓
Female VGA to Male VGA	0	

2. How does power supply to Rpi 4? (1 point)
   80% of respondents (16 of 20) answered this question correctly.

Charger	2	
Adapter	2	
USB connector	16	✓
Battery	0	

3. Which instruction set used in architecture is used in Rpi (1 point)
68% of respondents (13 of 19) answered this question correctly.

X86	0	
MSP	4	
AVR	2	
ARM	13	✓

4. What is the speed of Operation in Rpi 4 (1 point)
60% of respondents (12 of 20) answered this question correctly.

1.5GHz	12	✓
1.2GHz	1	
1GHz	0	
2.4GHz	7	

5. What bit is Processor is used in Rpi 4? (1 point)
16% of respondents (3 of 19) answered this question correctly.

32 Bit	4	
64 Bit	10	
32 and 64 Bit	3	✓
None of these	2	

6. In which one of the following is used for multitasking? (1 point)
58% of respondents (11 of 19) answered this question correctly.

Raspberry pi model	11	✓
Arduino Uno	1	
Both a and b	7	
None of these	0	

7. What are the advantages of raspberry pi? (1 point)
35% of respondents (7 of 20) answered this question correctly.

Consumes less power	7	
Low-cost	5	
Both a and b	7	✓
None of the above	1	

8. How many GPIO pins does raspberry pi model B+ have? (1 point)
80% of respondents (16 of 20) answered this question correctly.

7	0	
12	1	
25	3	
40	16	✓

9. The speed of raspberry pi 4 model B is (1 point)
37% of respondents (7 of 19) answered this question correctly.

1000MHz	9	
1500MHz	7	✓
2000MHz	2	
4000MHz	1	

10. What are the capabilities of raspberry pi? (1 point)
60% of respondents (12 of 20) answered this question correctly.

Browsing the internet	5	
Making spreadsheets	3	
Word pressing	0	
All of the above	12	✓

11. In which pin hardware pulse width modulation will not be available? (2 points)

20% of respondents (4 of 20) answered this question correctly.

GPIO 12 & GPIO 13	5	
GPIO 18 & GPIO 19	5	
Both a and b	6	
None of the above	4	✓

12. What is the standard form of SPI pin? (1 point)

70% of respondents (14 of 20) answered this question correctly.

Serial Parallel Input	2	
Serial Peripheral Interface	14	✓
Serial Parallel Interfacing	3	
None of the above	1	

13. What is the standard form of MISO pin (1 point)

80% of respondents (16 of 20) answered this question correctly.

Master In Slave Out	16	✓
Memory Input Slave Output	3	
Master Out Slave In	1	
None of the above	0	

14. The I2C pin on the raspberry pi board has _____ connections (2 points)

68% of respondents (13 of 19) answered this question correctly.

One	4	
Two	13	✓
Three	2	
Four	0	

15. _____ pins are the EEPROM pins on raspberry pi 3 model B (2 points)

42% of respondents (8 of 19) answered this question correctly.

GPIO 0	1	
GPIO 1	6	
Both a and b	8	✓
GPIO 4	4	

16. Which one of the following is a microcontroller? (2 points)

40% of respondents (8 of 20) answered this question correctly.

Arduino	8	✓
Raspberry pi	4	
Both a and b	8	
None of the above	0	

17. Which one of the following is a microcomputer? (2 points)

80% of respondents (16 of 20) answered this question correctly.

Arduino	2	
Raspberry pi	16	✓
Both a and b	0	
None of the above	2	

18. Which one of the following has both I2C and SPI buses? (2 points)

30% of respondents (6 of 20) answered this question correctly.

Arduino	1	
Raspberry pi	12	
Both a and b	6	✓
None of the above	1	

19. The raspberry pi has _____ (2 points)

75% of respondents (15 of 20) answered this question correctly.

Digital I/O	15	✓
Analog inputs	1	
Analog outputs	2	
All of the above	2	

20. In how many volts does raspberry pi runs? (1 point)

85% of respondents (17 of 20) answered this question correctly.

1V	2	
2V	0	
5V	17	✓
12V	1	

21. How many analog static RAM inputs does raspberry pi have? (1 point)

53% of respondents (10 of 19) answered this question correctly.

20	4	
26	0	
40	5	
0	10	✓

22. Which command is used to change the directory? (2 points)

80% of respondents (16 of 20) answered this question correctly.

cd	16	✓
pwd	2	
ls	0	
None of the above	2	

23. What is the purpose of the ifconfig command? (2 points)

53% of respondents (10 of 19) answered this question correctly.

Shows OS information	7	
Shows past commands	2	
Change the permission of the di...	0	
Used to get the network inform...	10	✓

24. Which one of the following is an open-source? (1 point)

70% of respondents (14 of 20) answered this question correctly.

Windows	1	
Linux	14	✓
FreeBSD	3	
None of the above	2	

25. How much power does raspberry pi model B+ consume? (2 points)

37% of respondents (7 of 19) answered this question correctly.

1W	6	
2W	4	
3.5W	7	✓
4W	2	

26. Which command shows bootup messages? (2 points)

75% of respondents (15 of 20) answered this question correctly.

dmesg	15	✓
free-h	2	
lshw	1	
None of the above	2	

27. Which command comes under raspberry pi terminal commands? (1 point)

63% of respondents (12 of 19) answered this question correctly.

ssh	5	
mkdir	0	
rm	2	
All of the above	12	✓

28. Which command is used to remove the directory? (1 point)

74% of respondents (14 of 19) answered this question correctly.

ssh	3	
mkdir	1	
rm	1	
rmdir	14	✓

29. Which command is used to create a new directory? (1 point)

68% of respondents (13 of 19) answered this question correctly.

ssh	4	
mkdir	13	✓
rm	1	
rmdir	1	

30. What is the standard form of CSI? (2 points)

65% of respondents (13 of 20) answered this question correctly.

Camera Serial Interface	13	✓
Common Serial Interface	4	
Complex Serial Interface	1	
None of the above	2	

31. What is the default Raspbian desktop sharing system to connect to RPi? (1 point)

75% of respondents (15 of 20) answered this question correctly.

Remote Desktop	5	
VNC	15	✓
Teamviewer	0	
ARD	0	

32. What is the RPi SoC manufacturer? (1 point)

90% of respondents (18 of 20) answered this question correctly.

Broadcom	18	✓
Samsung	1	
MediaTek	1	
Qualcomm	0	

33. What is the standard form of DSI? (1 point)

55% of respondents (11 of 20) answered this question correctly.

Display Serial Interface	11	✓
Digital Serial Interface	7	
Digital/Display Serial Interface	2	
None of the above	0	

34. What is the standard form of HDMI? (1 point)

80% of respondents (16 of 20) answered this question correctly.

High Definition Multimedia Inte...	16	✓
High Display Multimedia Interface	1	
High Description Multimedia Int...	3	
None of the above	0	

35. The Raspberry Pi has a _____ interface to allow it to perform serial data communications (1 point)

30% of respondents (6 of 20) answered this question correctly.

SPI	7	
UART	6	✓
GPIO	6	
I2C	1	

36. Which instruction set is used in Raspberry Pi? (2 points)

10% of respondents (2 of 20) answered this question correctly.

CISC	4	
RISC	3	
MIPS	2	✓
None of these mentioned	11	

37. Data collected by Raspberry Pi from the sensor can be (2 points)

55% of respondents (11 of 20) answered this question correctly.

Processed in Raspberry Pi	3	
Sent to other devices connected...	3	
Used to control/activate other d...	3	
All of the above	11	✓

38. Raspbian is _____ (1 point)

70% of respondents (14 of 20) answered this question correctly.

Assembler	4	
Language	1	
Compiler	1	
OS	14	✓

39. What are the disadvantages of raspberry pi? (2 points)

50% of respondents (10 of 20) answered this question correctly.

Limited functions	5	
Not ideal for multitasking	1	
Slow and bad for larger tasks	10	✓
All of the above	4	

40. How can you check your RPi revision info? (1 point)

30% of respondents (6 of 20) answered this question correctly.

check mounting holes	2	
cat /proc/device-tree/model	2	
cat /proc/cpuinfo	10	
all true	6	✓

41. What is the Ethernet/LAN cable used in RPi? (1 point)

21% of respondents (4 of 19) answered this question correctly.

Cat5	5	
Cat5e	5	
Cat6	5	
RJ45	4	✓

42. WiFi is not present in which of the following models? (1 point)

75% of respondents (15 of 20) answered this question correctly.

Raspberry pi 4	0	
Raspberry pi 3	1	
Raspberry pi Zero	15	✓
None of these	4	

43. What are the parameters that are default values? (1 point)

20% of respondents (4 of 20) answered this question correctly.

Port_Name and Bits	7	
Speed and Port_Names	4	✓
Speed and Parity	5	
Stop bit and Flow Control	4	

44. Which sensor is Analog Sensor (1 point)

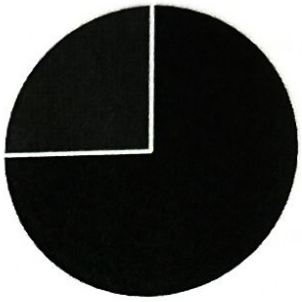
35% of respondents (7 of 20) answered this question correctly.

Ultrasonic Sensor	5	
IR Sensor	3	
Pir Sensor	5	
Soil Moisture Sensor	7	✓

45. Automatic Street Light System- SESNOR (1 point)

25% of respondents (5 of 20) answered this question correctly.

LDR Sensor, Relay with Street Li...	15	
Lux Sensor, Relay with Street Lig...	0	
Both a and b	5	✓
None Of these	0	



T. Rama
VTC Coordinator

HOD/ECE

Review: MCQ test - Value added Course on IoT Application Design using Raspberry Pi and Python

Respondent		Time to complete	Points
1	NOBLE RICHARD.L	08:01	37/60

✓ **Correct** 1/1 Points

1 / 1 pt
Auto-graded

1. What do we use TV / Monitor to Rpi 4?

- HDMI to VGA
- Female HDMI to Male HDMI
- Male Micro HDMI to Male HDMI ✓
- Female VGA to Male VGA

✓ **Correct** 1/1 Points

1 / 1 pt
Auto-graded

2. How does power supply to Rpi 4?

- Charger
- Adapter
- USB connector ✓
- Battery

✓ **Correct** 1/1 Points

1 / 1 pt
Auto-graded

3. Which instruction set used in architecture is used in Rpi

- X86
- MSP
- AVR
- ARM ✓

✓ **Correct** 1/1 Points

1 / 1 pt
Auto-graded

4. What is the speed of Operation in Rpi 4

- (●) 1.5GHz ✓
- ( ) 1.2GHz
- ( ) 1GHz
- ( ) 2.4GHz

✗ **Incorrect** 0/1 Points

0 / 1 pt
Auto-graded

5. What bit is Processor is used in Rpi 4?

- ( ) 32 Bit
- (●) 64 Bit
- ( ) 32 and 64 Bit ✓
- ( ) None of these

✓ **Correct** 1/1 Points

1 / 1 pt
Auto-graded

6. In which one of the following is used for multitasking?

- (●) Raspberry pi model ✓
- ( ) Arduino Uno
- ( ) Both a and b
- ( ) None of these

✓ **Correct** 1/1 Points

1 / 1 pt
Auto-graded

7. What are the advantages of raspberry pi?

- ( ) Consumes less power
- ( ) Low-cost
- (●) Both a and b ✓
- ( ) None of the above

✓ **Correct** 1/1 Points

1 / 1 pt
Auto-graded

8. How many GPIO pins does raspberry pi model B+ have?

- 7
- 12
- 25
- 40 ✓

✗ **Incorrect** 0/1 Points

0 / 1 pt
Auto-graded

9. The speed of raspberry pi 4 model B is

- 1000MHz
- 1500MHz ✓
- 2000MHz
- 4000MHz

✓ **Correct** 1/1 Points

1 / 1 pt
Auto-graded

10. What are the capabilities of raspberry pi?

- Browsing the internet
- Making spreadsheets
- Word pressing
- All of the above ✓

✗ **Incorrect** 0/2 Points

0 / 2 pts
Auto-graded

11. In which pin hardware pulse width modulation will not be available?

- GPIO 12 & GPIO 13
- GPIO 18 & GPIO 19
- Both a and b
- None of the above ✓

✓ **Correct** 1/1 Points

1 / 1 pt
Auto-graded

12. What is the standard form of SPI pin?

- ○ Serial Parallel Input
- ◉ Serial Peripheral Interface ✓
- ○ Serial Parallel Interfacing
- ○ None of the above

✗ **Incorrect** 0/1 Points

0 / 1 pt
Auto-graded

13. What is the standard form of MISO pin

- ○ Master In Slave Out ✓
- ◉ Memory Input Slave Output
- ○ Master Out Slave In
- ○ None of the above

✓ **Correct** 2/2 Points

2 / 2 pts
Auto-graded

14. The I2C pin on the raspberry pi board has _____ connections

- ○ One
- ◉ Two ✓
- ○ Three
- ○ Four

✓ **Correct** 2/2 Points

2 / 2 pts
Auto-graded

15. _____ pins are the EEPROM pins on raspberry pi 3 model B

- ○ GPIO 0
- ○ GPIO 1
- ◉ Both a and b ✓
- ○ GPIO 4

✗ **Incorrect** 0/2 Points

0 / 2 pts
Auto-graded

16. Which one of the following is a microcontroller?

- ○ Arduino ✓
- ○ Raspberry pi
- ◉ Both a and b
- ○ None of the above

✓ **Correct** 2/2 Points

2 / 2 pts
Auto-graded

17. Which one of the following is a microcomputer?

- ○ Arduino
- ◉ Raspberry pi ✓
- ○ Both a and b
- ○ None of the above

✗ **Incorrect** 0/2 Points

0 / 2 pts
Auto-graded

18. Which one of the following has both I2C and SPI buses?

- ○ Arduino
- ◉ Raspberry pi
- ○ Both a and b ✓
- ○ None of the above

✓ **Correct** 2/2 Points

2 / 2 pts
Auto-graded

19. The raspberry pi has _____

- ◉ Digital I/O ✓
- ○ Analog inputs
- ○ Analog outputs
- ○ All of the above

✓ **Correct** 1/1 Points

1 / 1 pt
Auto-graded

20. In how many volts does raspberry pi runs?

- ○ 1V
- ○ 2V
- ◉ 5V ✓
- ○ 12V

✗ **Incorrect** 0/1 Points

0 / 1 pt
Auto-graded

21. How many analog static RAM inputs does raspberry pi have?

No answer provided.

✓ **Correct** 2/2 Points

2 / 2 pts
Auto-graded

22. Which command is used to change the directory?

- ◉ cd ✓
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T-Ramya
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Respondent		Time to complete	Points
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T. Ram
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11	RANJITH RAJ.L	29:37	39/60

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(An Autonomous Institution - AFFILIATED TO ANNA UNIVERSITY, CHENNAI)
S.P.G.Chidambara Nadar - G.Nagammal Campus
S.P.G.C. Nagar, K.Vellakulam – 625 701 (Near VIRUDHUNAGAR).

Department Electronics and Communication Engineering

Value Added Course on IoT Application Design using Raspberry Pi and Python

Event Date: 31.07.2023 to 05.08.2023

Mark Statement

Department: ECE
Year: III

Regulation: 2021
Semester: V

Sl. No	Roll No.	Reg. No.	Student Name	Internal Marks (40)	External Marks (60)	Total (100)
1.	21UEC009	920421106040	SATHISH KUMAR BALAJI.R	36	37	73
2.	21UEC013	920421106032	PUSHPARATHINA.R	36	40	76
3.	21UEC019	920421106004	ANUKARTHIGA.A	37	21	58
4.	21UEC020	920421106051	UVARAJ.A	37	31	68
5.	21UEC022	920421106054	YUVASHREE.V	36	25	61
6.	21UEC023	920421106017	KARUNESHVAR.M	35	37	72
7.	21UEC024	920421106031	PREMA.E	38	34	72
8.	21UEC028	920421106050	THANGAMAREESWARI.T	38	41	79
9.	21UEC029	920421106033	RAMAR.A	36	27	63
10.	21UEC030	920421106045	SOORYA NARAYANAN.S	37	36	73
11.	21UEC032	920421106015	JAYASURYA.S	38	28	66
12.	21UEC034	920421106036	RANJITH RAJ.L	36	39	75
13.	21UEC038	920421106025	NAVEEN.R	37	28	65
14.	21UEC039	920421106027	NOBLE RICHARD.L	34	37	71
15.	21UEC041	920421106047	SUKIS KRISHNA.P	34	32	66
16.	21UEC044	920421106044	SIYON.C	36	26	62
17.	21UEC048	920421106014	HASEEM ABU SHEIK.S	34	39	73
18.	21UEC051	920421106007	DHANUSH.R	35	57	92
19.	21UEC053	920421106041	SENTHIL MURUGAN.K	37	27	64
20.	21UEC059	920421106304	SRIKANTH.S	37	19	56

Signature with Seal
(Er.R.Jagadeswaran)

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Value Added Course on IoT Application Design using Raspberry Pi and Python (31.07.2023 to 05.07.2023)

Department of Electronics and Communication Engineering

SI.No	Roll Number	Register Number	Name of the Student	Presentation (25 marks)	Quiz (60marks)	Document (15 marks)	Internal (40 mark)	External (60 mark)	Total (100 marks)
1	21UEC009	920421106040	SATHISH KUMAR BALAJI.R	24	37	12	36	37	**73**
2	21UEC013	920421106032	PUSHPARATHINA.R	23	40	13	36	40	**76**
3	21UEC019	920421106004	ANUKARTHIGA.A	24	21	13	37	21	**58**
4	21UEC020	920421106051	UVARAJ.A	23	31	14	37	31	**68**
5	21UEC022	920421106054	YUVASHREE.V	23	25	13	36	25	**61**
6	21UEC023	920421106017	KARUNESHVAR.M	23	37	12	35	37	**72**
7	21UEC024	920421106031	PREMA.E	24	34	14	38	34	**72**
8	21UEC028	920421106050	THANGAMAREESWARI.T	24	41	14	38	41	**79**

9	21UEC029	920421106033	RAMAR.A	23	27	13	36	27	**63**
10	21UEC030	920421106045	SOORYA NARAYANAN.S	23	36	14	37	36	**73**
11	21UEC032	920421106015	JAYASURYA.S	24	28	14	38	28	**66**
12	21UEC034	920421106036	RANJITH RAJ.L	23	39	13	36	39	**75**
13	21UEC038	920421106025	NAVEEN.R	24	28	13	37	28	**65**
14	21UEC039	920421106027	NOBLE RICHARD.L	23	37	11	34	37	**71**
15	21UEC041	920421106047	SUKIS KRISHNA.P	21	32	13	34	32	**66**
16	21UEC044	920421106044	SIYON.C	24	26	12	36	26	**62**
17	21UEC048	920421106014	HASEEM ABU SHEIK.S	21	39	13	34	39	**73**
18	21UEC051	920421106007	DHANUSH.R	23	57	12	35	57	**92**
19	21UEC053	920421106041	SENTHIL MURUGAN.K	23	27	14	37	27	**64**
20	21UEC059	920421106304	SRIKANTH.S	24	19	13	37	19	**56**

T. Boss
VAC coordinator

R.J
HOD/ECE

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Value Added Course on IoT Application Design using Raspberry Pi and Python (31.07.2023 to 05.07.2023)
Department of Electronics and Communication Engineering

SI.No	Roll Number	Register Number	Name of the Student	Presentation (10mark)	Content & Deliverable (5mark)	Progress of work (5 mark)	Queries (5 mark)	Presentation (25 marks	Document (15 marks)	Total (40 marks)
1	21UEC009	920421106040	SATHISH KUMAR BALAJI.R	10	5	5	4	24	12	36
2	21UEC013	920421106032	PUSHPARATHINA.R	10	5	5	4	24	12	36
3	21UEC019	920421106004	ANUKARTHIGA.A	9	5	5	5	24	13	37
4	21UEC020	920421106051	UVARAJ.A	9	5	5	4	23	14	37
5	21UEC022	920421106054	YUVASHREE.V	9	5	5	4	23	13	36
6	21UEC023	920421106017	KARUNESHVAR.M	9	5	4	4	22	13	35
7	21UEC024	920421106031	PREMA.E	10	5	5	4	24	14	38
8	21UEC028	920421106050	THANGAMAREESWARI.T	9	5	5	5	24	14	38
9	21UEC029	920421106033	RAMAR.A	9	4	5	5	23	13	36
10	21UEC030		SOORYA NARAYANAN.S	9	4	5	5	23	14	37

SI.No	Roll Number	Register Number	Name of the Student	Presentation (10mark)	Content & Deliverable	Progress of work (5 mark)	Queries (5 mark)	Presentation (25 marks	Document (15 marks)	Total (40 marks)
11	21UEC032	920421106015	JAYASURYA.S	9	5	5	5	24	14	38
12	21UEC034	920421106036	RANJITH RAJ.L	9	5	5	4	23	13	36
13	21UEC038	920421106025	NAVEEN.R	9	5	5	5	24	13	37
14	21UEC039	920421106027	NOBLE RICHARD.L	9	4	5	4	22	12	34
15	21UEC041	920421106047	SUKIS KRISHNA.P	9	4	4	4	21	13	34
16	21UEC044	920421106044	SIYON.C	9	5	5	5	24	12	36
17	21UEC048	920421106014	HASEEM ABU SHEIK.S	9	4	4	4	21	13	34
18	21UEC051	920421106007	DHANUSH.R	9	5	5	4	23	12	35
19	21UEC053	920421106041	SENTHIL MURUGAN.K	9	5	5	4	23	14	37
20	21UEC059	920421106304	SRIKANTH.S	9	5	5	5	24	13	37

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Value Added Course on IoT Application Design using Raspberry Pi and Python (31.07.2023 to 05.07.2023)
Department of Electronics and Communication Engineering

Sl.No	Roll Number	Register Number	Name of the Student	Presentation (10mark)	Content & Deliverable (5mark)	Progress of work (5 mark)	Queries (5 mark)	Presentation (25 marks	Document (15 marks)	Total (40 marks)
1	21UEC009	920421106040	SATHISH KUMAR BALAJI.R	9	5	5	5	24	12	**36**
2	21UEC013	920421106032	PUSHPARATHINA.R	9	5	5	4	23	13	**36**
3	21UEC019	920421106004	ANUKARTHIGA.A	9	5	5	5	24	13	**37**
4	21UEC020	920421106051	UVARAJ.A	9	5	5	4	23	14	**37**
5	21UEC022	920421106054	YUVASHREE.V	9	5	5	4	23	13	**36**
6	21UEC023	920421106017	KARUNESHVAR.M	9	5	5	4	23	12	**35**
7	21UEC024	920421106031	PREMA.E	9	5	5	5	24	14	**38**
8	21UEC028	920421106050	THANGAMAREESWARI.T	9	5	5	5	24	14	**38**
9	21UEC029	920421106033	RAMAR.A	9	5	5	4	23	13	**36**
10	21UEC030	920421106045	SOORYA NARAYANAN.S	9	5	5	4	23	14	**37**
11	21UEC032	920421106015	JAYASURYA.S	9	5	5	5	24	14	**38**
12	21UEC034	920421106036	RANJITH RAJ.L	9	5	5	4	23	13	**36**
13	21U[illegible]C038	920421106025	NAVEEN.R	9	5	5	5	24	13	**37**

SI.No	Roll Number	Register Number	Name of the Student	Presentation (10mark)	Content & Delivera	Progress of work (5 mark)	Queries (5 mark)	Presentation (25 marks	Document (15 marks)	Total (40 marks)
14	21UEC039	920421106027	NOBLE RICHARD.L	9	5	5	4	23	11	**34**
15	21UEC041	920421106047	SUKIS KRISHNA.P	9	4	4	4	21	13	**34**
16	21UEC044	920421106044	SIYON.C	9	5	5	5	24	12	**36**
17	21UEC048	920421106014	HASEEM ABU SHEIK.S	9	4	4	4	21	13	**34**
18	21UEC051	920421106007	DHANUSH.R	9	5	5	4	23	12	**35**
19	21UEC053	920421106041	SENTHIL MURUGAN.K	9	5	5	4	23	14	**37**
20	21UEC059	920421106304	SRIKANTH.S	9	5	5	5	24	13	**37**

T. Bathi

Dr.T.Prathiba

24/4/23

Feedback - Value Added Course - IoT Application Design using Raspberry Pi and Python

Date : 31.07.2023 to 05.08.2023

Hi, Prathiba. When you submit this form, the owner will see your name and email address.

* Required

1. Name of the student *

Enter your answer

2. Roll Number *

Enter your answer

3. Department *

Enter your answer

4. Whether objectives of the Value Added Course Met? *

- ◯ Completely agree
- ◯ Strongly agree
- ◯ Agree
- ◯ Partly Agree
- ◯ Disagree

5. Was the Program sequence well planned? *

- ◯ Completely agree
- ◯ Strongly agree
- ◯ Agree
- ◯ Partly Agree
- ◯ Disagree

6. Were the lectures clear and easy to understand? *

- ◯ Completely Agree
- ◯ Option 2
- ◯ Strongly Agree
- ◯ Agree
- ◯ Partly Agree
- ◯ Disagree

7. Was the instructor encouraged in the interaction? *

- ◯ Completely Agree
- ◯ Strongly Agree
- ◯ Agree
- ◯ Partly Agree
- ◯ Disagree

8. Whether the information presented at this event was highly beneficial. *

- ◯ Completely Agree
- ◯ Strongly Agree
- ◯ Agree
- ◯ Partly Agree
- ◯ Disagree

9. Whether the handson given in the value added course was Good *

- ◯ Completely Agree
- ◯ Strongly Agree
- ◯ Agree
- ◯ Partly Agree
- ◯ Disagree

10. Comments / Suggestions *

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T. Balaji
VAC coordinator

N. J
HoD/ECE 24/1/23

Feedback - Value Added Course - IoT Application Design using Raspberry Pi and Python

17	01:19	Active
Responses	Average time to complete	Status

1. Name of the student (0 point)

17
Responses

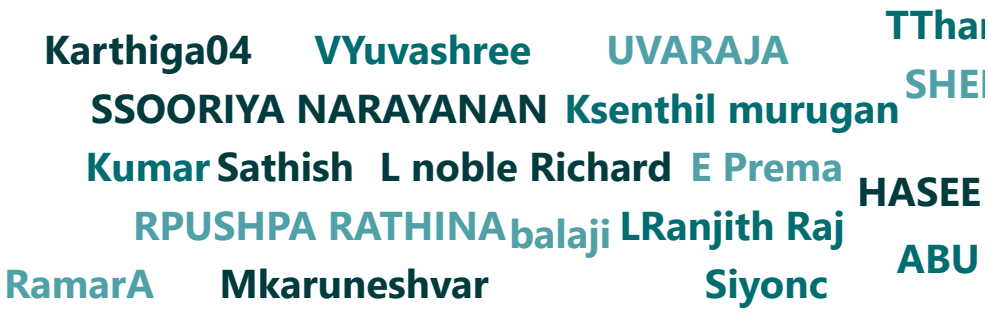
Latest Responses

"*T.Thangamareeswari*"

"*HASEEM ABU SHEIK.S*"

"*P.sukiskrishna*"

1 respondents (**6**%) answered **L noble Richard** for this question.



2. Roll Number (0 point)

17
Responses

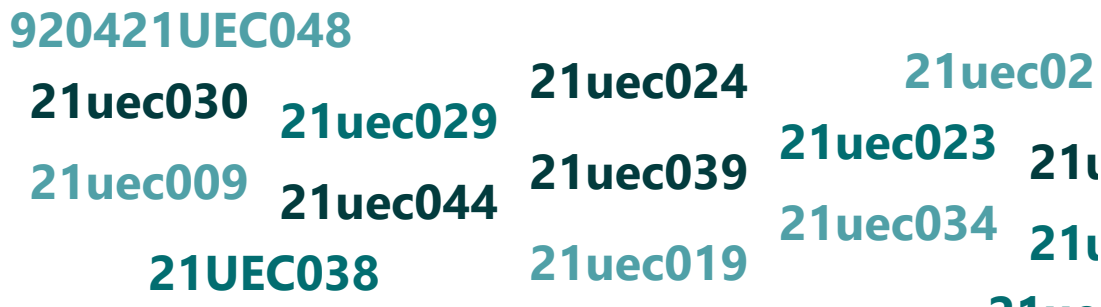
Latest Responses

"21UEC028"

"920421UEC048"

"21uec041"

1 respondents (**6**%) answered **21uec039** for this question.



3. Department (0 point)

17
Responses

Latest Responses

"ECE"

"Electronic and communication "

"ECE"

11 respondents (**65**%) answered **ECE** for this question.

4. Whether objectives of the Value Added Course Met? (0 point)

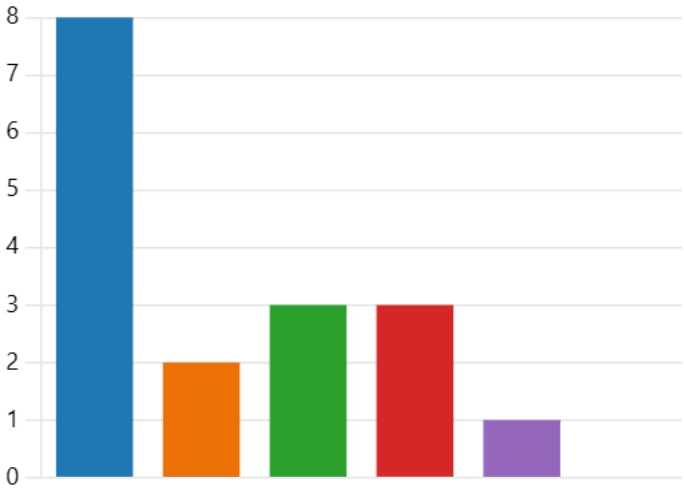
Completely agree	8
Strongly agree	6
Agree	3
Partly Agree	0
Disagree	0

5. Was the Program sequence well planned? (0 point)

Completely agree	8
Strongly agree	6
Agree	2
Partly Agree	0
Disagree	1

6. Were the lectures clear and easy to understand? (0 point)

Completely Agree	8
Option 2	2
Strongly Agree	3
Agree	3
Partly Agree	1
Disagree	0



7. Was the instructor encouraged in the interaction? (0 point)

Completely Agree	8
Strongly Agree	4
Agree	4
Partly Agree	1
Disagree	0

8. Whether the information presented at this event was highly beneficial. (0 point)

Completely Agree	7
Strongly Agree	6
Agree	4
Partly Agree	0
Disagree	0

9. Whether the handson given in the value added course was Good (0 point)

Completely Agree	7
Strongly Agree	4
Agree	4
Partly Agree	2
Disagree	0

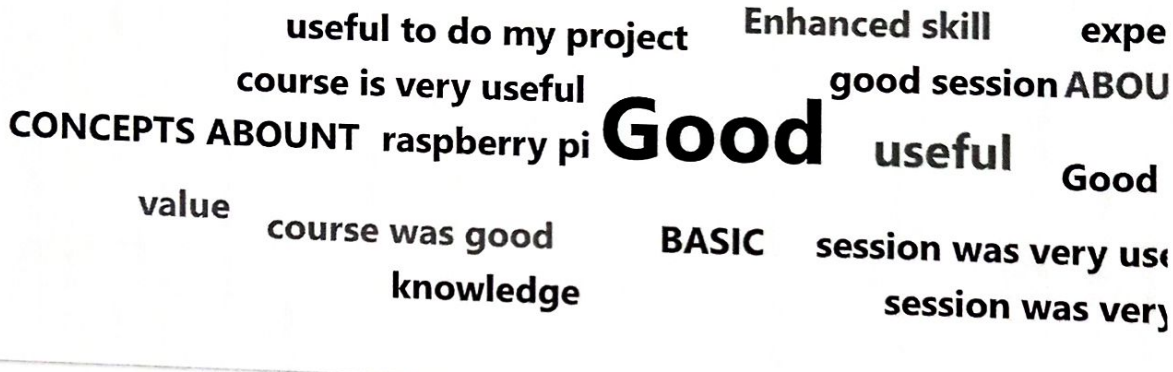
10. Comments / Suggestions (0 point)

16
Responses

Latest Responses
"This session was very helpful"
"GOOD"
"Good "

Update

7 respondents (**41%**) answered **Good** for this question.



T. Ratna
VAC Coordinator

HoD/ECE
24/11/17

ID	Start time	Completion time	Email	Name	Department	Whether objectives of the Value Added Course Met?	Was the Program sequence well planned?	Were the lectures clear and easy to understand?	Was the instructor encouraged in the interaction?	Whether the information presented at this event was highly beneficial.	Whether the handson given in the value added course was Good	Comments / Suggestions
1	8-5-23 15:25:34	8-5-23 15:25:45	21uec039@kamarajengg.edu.in	NOBLE RICHARD.L	ECE	Completely agree	Completely agree	Completely Agree	Completely Agree	Completely Agree	Completely Agree	Good
2	8-5-23 15:25:06	8-5-23 15:25:56	21uec023@kamarajengg.edu.in	KARUNESHVAR.M	ECE	Agree	Agree	Agree	Agree	Agree	Agree	Enhanced skill
3	8-5-23 15:25:13	8-5-23 15:26:01	21uec009@kamarajengg.edu.in	SATHISH KUMAR BALAJI.R	ECE	Strongly agree	Strongly agree	Option 2	Strongly Agree	Strongly Agree	Strongly Agree	
4	8-5-23 15:25:01	8-5-23 15:26:12	21uec034@kamarajengg.edu.in	RANJITH RAJ.L	Electronic and communication engineering	Completely agree	Completely agree	Completely Agree	Completely Agree	Completely Agree	Completely Agree	Very good
5	8-5-23 15:25:43	8-5-23 15:26:14	21uec044@kamarajengg.edu.in	SIYON.C	ECE	Completely agree	Completely agree	Completely Agree	Completely Agree	Completely Agree	Completely Agree	
6	8-5-23 15:24:52	8-5-23 15:26:21	21uec013@kamarajengg.edu.in	PUSHPARATHINA.R	ELECTRONICS AND COMMUNICTION ENGINEERING	Strongly agree	Strongly agree	Option 2	Strongly Agree	Strongly Agree	Strongly Agree	value added course was good and useful
7	8-5-23 15:25:24	8-5-23 15:26:28	21uec029@kamarajengg.edu.in	RAMAR.A	Ece	Strongly agree	Strongly agree	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree	----
8	8-5-23 15:25:00	8-5-23 15:26:44	21uec019@kamarajengg.edu.in	ANUKARTHIGA.A	ECE	Completely agree	Completely agree	Completely Agree	Completely Agree	Completely Agree	Completely Agree	I gain knowledge about raspberry pi.
9	8-5-23 15:25:16	8-5-23 15:27:07	21uec024@kamarajengg.edu.in	PREMA.E	Electronics and communication engineering	Completely agree	Completely agree	Completely Agree	Completely Agree	Completely Agree	Completely Agree	The session was very useful
10	8-5-23 15:24:53	8-5-23 15:27:17	21uec030@kamarajengg.edu.in	SOORYA NARAYANAN.S	ELECTRONICS AND COMMUNICATION ENGINEERING	Completely agree	Completely agree	Completely Agree	Completely Agree	Strongly Agree	Strongly Agree	IT IS VERY USEFUL AS I HAD LEARNT ABOUT SOME BASIC CONCEPTS ABOUNT RASPBERRY PI
11	8-5-23 15:25:56	8-5-23 15:27:18	21uec038@kamarajengg.edu.in	NAVEEN.R	Ece	Agree	Disagree	Partly Agree	Partly Agree	Agree	Agree	No
12	8-5-23 15:26:41	8-5-23 15:27:25	21uec022@kamarajengg.edu.in	YUVASHREE.V	Ece	Strongly agree	Strongly agree	Strongly Agree	Strongly Agree	Strongly Agree	Partly Agree	It was a good session
13	8-5-23 15:26:11	8-5-23 15:27:44	21uec053@kamarajengg.edu.in	SENTHIL MURUGAN.K	Ece	Strongly agree	Strongly agree	Agree	Agree	Agree	Agree	This course is very useful to do my project
14	8-5-23 15:26:44	8-5-23 15:27:49	21uec020@kamarajengg.edu.in	UVARAJ.A	Electronics and communication Engineering	Agree	Agree	Agree	Agree	Agree	Partly Agree	Good quality of learning experience

15	8-5-23 15:27:31	8-5-23 15:28:28	21uec041@kamarajengg.edu.in	SUKIS KRISHNA.P	ECE	Completely agree	Strongly agree	Completely Agree	Completely Agree	Completely Agree	Completely Agree	Good
16	8-5-23 15:27:32	8-5-23 15:28:39	21uec048@kamarajengg.edu.in	HASEEM ABU SHEIK.S	Electronic and communication	Strongly agree	Completely agree	Strongly Agree	Agree	Strongly Agree	Agree	GOOD
17	8-5-23 15:25:09	8-5-23 15:28:41	21uec028@kamarajengg.edu.in	THANGAMAREESWARI.T	ECE	Completely agree	Completely agree	Completely Agree	Completely Agree	Completely Agree	Completely Agree	This session was very helpful

T. Bala
VAC coordinator

HOD/ECE

Review: Feedback - Value Added Course - IoT Application Design using Raspberry Pi and Python

Respondent

2 KARUNESHVAR.M

00:51

Time to complete

1. Name of the student * Score / 0 pts

M.karuneshvar

2. Roll Number * Score / 0 pts

21uec023

3. Department * Score / 0 pts

ECE

4. Whether objectives of the Value Added Course Met? * Score / 0 pts

- ○ Completely agree
- ○ Strongly agree
- ◉ Agree
- ○ Partly Agree
- ○ Disagree

5. Was the Program sequence well planned? * Score / 0 pts

- ○ Completely agree
- ○ Strongly agree
- ◉ Agree
- ○ Partly Agree
- ○ Disagree

6. Were the lectures clear and easy to understand? * Score / 0 pts

- ○ Completely Agree
- ○ Option 2
- ○ Strongly Agree
- ◉ Agree
- ○ Partly Agree
- ○ Disagree

7. Was the instructor encouraged in the interaction? * Score / 0 pts

- ○ Completely Agree
- ○ Strongly Agree
- ◉ Agree
- ○ Partly Agree
- ○ Disagree

8. Whether the information presented at this event was highly beneficial. * Score / 0 pts

- ○ Completely Agree
- ○ Strongly Agree
- ◉ Agree
- ○ Partly Agree
- ○ Disagree

9. Whether the handson given in the value added course was Good * Score / 0 pts

- ○ Completely Agree
- ○ Strongly Agree
- ◉ Agree
- ○ Partly Agree
- ○ Disagree

10. Comments / Suggestions * Score / 0 pts

Enhanced skill

T. Bhatt
VAC Coordinator

24/11/23
HOD | ECE

Review: Feedback - Value Added Course - IoT Application Design using Raspberry Pi and Python

Respondent

4 RANJITH RAJ

01:12

Time to complete

1. Name of the student * Score / 0 pts

L Ranjith Raj

2. Roll Number * Score / 0 pts

21uec034

3. Department * Score / 0 pts

Electronic and communication engineering

4. Whether objectives of the Value Added Course Met? * Score / 0 pts

- (●) Completely agree
- ( ) Strongly agree
- ( ) Agree
- ( ) Partly Agree
- ( ) Disagree

5. Was the Program sequence well planned? * Score / 0 pts

- (●) Completely agree
- ( ) Strongly agree
- ( ) Agree
- ( ) Partly Agree
- ( ) Disagree

Score / 0 pts

6. Were the lectures clear and easy to understand? *

- (●) Completely Agree
- ( ) Option 2
- ( ) Strongly Agree
- ( ) Agree
- ( ) Partly Agree
- ( ) Disagree

Score / 0 pts

7. Was the instructor encouraged in the interaction? *

- (●) Completely Agree
- ( ) Strongly Agree
- ( ) Agree
- ( ) Partly Agree
- ( ) Disagree

8. Whether the information presented at this event was highly beneficial. * Score / 0 pts

- (●) Completely Agree
- ( ) Strongly Agree
- ( ) Agree
- ( ) Partly Agree
- ( ) Disagree

9. Whether the handson given in the value added course was Good * Score / 0 pts

- (●) Completely Agree
- ( ) Strongly Agree
- ( ) Agree
- ( ) Partly Agree
- ( ) Disagree

10. Comments / Suggestions * Score / 0 pts

Very good

T. Poorni
VAC Coordinator

A. J
HOD/ECE
24/11/23

Review: Feedback - Value Added Course - IoT Application Design using Raspberry Pi and Python

Respondent

6 PUSHPARATHINA.R

01:30
Time to complete

1. Name of the student * Score / 0 pts

R.PUSHPA RATHINA

2. Roll Number * Score / 0 pts

920421UEC013

3. Department * Score / 0 pts

ELECTRONICS AND COMMUNICTION ENGINEERING

4. Whether objectives of the Value Added Course Met? * Score / 0 pts

- ○ Completely agree
- ◉ Strongly agree
- ○ Agree
- ○ Partly Agree
- ○ Disagree

5. Was the Program sequence well planned? * Score / 0 pts

- ○ Completely agree
- ◉ Strongly agree
- ○ Agree
- ○ Partly Agree
- ○ Disagree

6. Were the lectures clear and easy to understand? *

Score / 0 pts

- ○ Completely Agree
- ◉ Option 2
- ○ Strongly Agree
- ○ Agree
- ○ Partly Agree
- ○ Disagree

7. Was the instructor encouraged in the interaction? *

Score / 0 pts

- ○ Completely Agree
- ◉ Strongly Agree
- ○ Agree
- ○ Partly Agree
- ○ Disagree

8. Whether the information presented at this event was highly beneficial. *

Score / 0 pts

- ○ Completely Agree
- ◉ Strongly Agree
- ○ Agree
- ○ Partly Agree
- ○ Disagree

9. Whether the handson given in the value added course was Good *

Score / 0 pts

- ○ Completely Agree
- ◉ Strongly Agree
- ○ Agree
- ○ Partly Agree
- ○ Disagree

10. Comments / Suggestions *

Score / 0 pts

value added course was good and useful

T. Ramesh
VAC Coordinator

HOD/ECE

KAMARAJ
COLLEGE OF ENGINEERING & TECHNOLOGY
(An Autonomous Institution - AFFILIATED TO ANNA UNIVERSITY, CHENNAI)
S.P.G.Chidambara Nadar - C.Nagammal Campus
S.P.G.C. Nagar, K.Vellakulam – 625 701 (Near VIRUDHUNAGAR).

Department of Electronics and Communication Engineering

Value Added Course on IoT Application Design using Raspberry Pi and Python (31.07.2023 to 05.07.2023)

Video and Oral Feedback Link

Video Feedback

T. Ramesh
Coordinators

N. J. Bar 4/11/23
HoD/ECE

KAMARAJ
COLLEGE OF ENGINEERING & TECHNOLOGY

(An Autonomous Institution - Affiliated to Anna University, Chennai)
S.P.G. Chidambara Nadar - C.Nagammal Campus
S.P.G.C. Nagar, K. Vellakulam - 625 701, (Near Virudhunagar), Madurai District.

Submitted to the SECRETARY for approval through the PRINCIPAL

Book No. [ ]

Date 9/6/2023

SL.No. 3

Approval may please be granted for Conducting Value added course for III year ECE students for the strength of 90 students in "IOT Application Design using Raspberry Pi and Python" by Enthu Technology Solutions India Pvt, Ltd, Coimbatore. The Tentative date is from 11/7/2023 to 15/7/23 & 17/7/23.

Kindly request you to provide hospitality for the resource persons during the Value added Course.

Enclosed:-

1. Quotation for Value added Course - Registration fees student Rs 1500/- student

T. Ravi 9/6/23
Signature of Faculty

HOD 9/6/23

PRINCIPAL 14/6/23

OFFICE USE

Value Added Course Exp

1) Account Head
2) Budget allotted
3) Amount committed / Spent sofar
4) Balance available

OM

Treasurer

Secretary

KAMARAJ
COLLEGE OF ENGINEERING & TECHNOLOGY
(An Autonomous Institution - Affiliated to Anna University, Chennai)
S.P.G. Chidambara Nadar - C.Nagammal Campus
S.P.G.C. Nagar, K. Vellakulam - 625 701, (Near Virudhunagar), Madurai District.

Submitted to the SECRETARY for approval through the PRINCIPAL

Book No.

SL.No. 18

ECE

Date 18.08.2023

With reference to the approval granted in Sl. no. 3 for conducting value added course for III ECE students for the strength of 20 students on 'IoT Application Design using Raspberry Pi and Python' by Enthu Technology solutions pvt ltd, the registration amount is Rs.2124/student. Kindly grant approval.

Enclosure: Quotation (Rs 2124 * 20 students = Rs 42,480/-)

T. Pratha 18/8/23
Signature of Faculty
(Dr.T.PRATHIBA)

HOD

PRINCIPAL

OFFICE USE

1) Account Head : Value added Comm Expn
2) Budget allotted :
3) Amount committed / Spent sofar :
4) Balance available :

OM

Treasurer

Secretary

KAMARAJ
COLLEGE OF ENGINEERING & TECHNOLOGY
(An Autonomous Institution - AFFILIATED TO ANNA UNIVERSITY, CHENNAI)
S.P.G.Chidambara Nadar - C.Nagammal Campus
S.P.G.C. Nagar, K.Vellakulam – 625 701 (Near VIRUDHUNAGAR).

KAMARAJ/AO/2023-24/

27-07-2023

CIRCULAR

Department of Electronics and Communication Engineering of Kamaraj College of Engineering and Technology organizes 6 days Value Added course for III ECE students from **31.07.2023 to 05.08.2023**. The details of course are given below

Name of Value Added Course	Conducted by	Venue
IoT Application Design using Raspberry Pi and Python	Enthu Technology Solutions India Pvt. Ltd, Coimbatore	VLSI Lab (ECE Lab IV)

PRINCIPAL

Copy to:

1. To be read in III year ECE Dept. Class Rooms
2. Circulated to all the ECE Dept. Teaching Staff Members through their Mail ID
3. Dean (Academics)
4. Superintendent / Administrative Office
5. HoD / ECE
6. File

KAMARAJ
COLLEGE OF ENGINEERING & TECHNOLOGY
(An Autonomous Institution - AFFILIATED TO ANNA UNIVERSITY, CHENNAI)
S.P.G.Chidambara Nadar - C.Nagammal Campus
S.P.G.C. Nagar, K.Vellakulam – 625 701 (Near VIRUDHUNAGAR).

Department of Electronics and Communication Engineering

VALUE ADDED COURSE ON

"Internet of Things Using LoRaWAN Technology"
"IoT Application Design using Raspberry Pi and Python"
AND
" Deep Learning"

Resource Persons:
Dr. K. Subramanian, Enthu Technology Solution India Pvt. Ltd., Coimbatore
Mr. Jegadeswaran R, Enthu Technology Solution India Pvt. Ltd., Coimbatore
Mr. Ramachandiran R, Pantech eLearning Private Ltd., Chennai

----------**Inaugural Function**----------

Date: 31-07-2023 Time: 9.15 AM

Venue: CSE Conference Hall 1 (Ground Floor – D Block)

Welcome Address : Dr. T. Prathiba, Assistant Professor / ECE

Inaugural Address : Dr. R. Suresh Babu,
Professor & Head / ECE, Dean Academic (Courses)
Kamaraj College of Engineering and Technology.

Felicitation : Dr. S. Senthil
Principal
Kamaraj College of Engineering and Technology.

----------Valedictory Function----------

Date: 05-08-2023 Time: 3.00 PM

Venue: CSE Conference Hall 1 (Ground Floor – D Block)

Valedictory Address : Dr. R. Suresh Babu, Professor & Head / ECE

Vote of Thanks : Dr. S. Nisha Rani, Assistant Professor / ECE

enthutech

t No: 32, P.M.R Layout, 5th Street, Block - B,
Deepa Mill Road, Goldwins, Civil Aerodrome Post,
Coimbatore
India
GSTIN : 33AADCE9083H1ZJ

TAX INVOICE

Invoice Number	ETS/23-24/IN/306	**Place of Supply**	Tamil Nadu
Invoice Date	25-08-2023	**Kind Attention**	Kamaraj College of Engineering and Technology
Payment Terms	Immediate Payment	**Mobile Number**	(+91)4549 278171
Payment Due Date	25/Aug/2023	**Email**	mail@kamarajengg.edu.in
Customer Reference	Your phone call dated on 03.06.2023	**Customer Comments**	
E-Way Bill Number	[redacted]	**Acknowledge Date**	
IRN Number		**Acknowledge No**	[redacted]

Bill To

Kamaraj College of Engineering and Technology
S.P.G.Chidambara nadar - C.Nagammal Campus
S.P.G.C. Nagar,K.Vellakulam
Virudhunagar , Tamil Nadu - 625701 India
(+91)4549 278171

Ship To

Kamaraj College of Engineering and Technology
S.P.G.Chidambara nadar - C.Nagammal Campus
S.P.G.C. Nagar,K.Vellakulam
Virudhunagar , Tamil Nadu - 625701 India
(+91)4549 278171

S #	ITEM & DESCRIPTION	HSN	QTY	UNIT PRICE	CGST RATE	CGST AMOUNT	SGST RATE	SGST AMOUNT	EXTENDED PRICE
1	Onsite 6 day Value Added Course on IoT Application Design using Raspberry Pi and Python	999293	20	1,800.00	9.0 %	3240.00	9.0 %	3240.00	36,000.0(
otals			**20**	**1800.00 ₹**		**3240.00 ₹**		**3240.00 ₹**	**36000.00 ₹**

Sub Total	**36000.00 ₹**
CGST	**36,000.00 ₹**
SGST	**3240.00 ₹**
Total	**3240.00 ₹**
Payment Made	**42,480.00 ₹**
Balance Due	**(-) 0.00 ₹**
	42,480.00 ₹

Total In Words :**Forty-Two Thousand, Four Hundred And Eighty Rupees only**

ems in Total : **20**

anks for your business.

ogram Title: Onsite 6 day Value Added Course on IoT Application Design
ing Raspberry Pi and Python
e Program Proposed by: Dr.R.Sureshbabu & Dr.T.Prathiba
gible Branch: BE
ximum Strength:20
nds-On Training Period: 6 days
ining Charges: Rs. 300 per student per day

ctive:

introduce the fundamental architecture of Microcontrollers
Learn the interface of peripheral devices (Sensors/Actuators)
derstand the concept of Wireless Communication Protocols for
berry Pi
cations (Wi-Fi, Bluetooth, BLE)
erstand the concept of MQTT, HTTP Protocols

quisite (Technical):
: Knowledge of Microcontroller
: Knowledge of Python Programming

to be covered in the Technology Training Period:

l

uction to Raspberry Pi
of Raspberry Pi Board
rry Pi Board Specification
puts/outputs
) OS Installation

For Enthu Technology Solutions India Pvt. Ltd.

Dr. K. Subramanian
Technical Lead
Enthu Technology Solutions India Private Limited
Coimbatore-04
Cell: 9944849058 | Email: subramanian@enthutec

AUTOMATIC PLANT WATERING SYSTEM

A PROJECT REPORT

Submitted by

R.PUSHPA RATHINA

V.YUVASHREE

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

in

ELECTRONICS AND COMMUNICATION ENGINEERING

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY

K.VELLAKULLAM-625 701,NEAR VIRUDHUNAGAR,TAMIL NADU

JANUARY 2023

BONAFIDE CERTIFICATE

Certified that this project entitled "Water Level Controller Using Raspberry Pi" is the bonafide record of Value Added Course on IoT Application Design using Raspberry Pi and Python from 31.07.2023 to 05.08.2023 done by Pushpa Rathina R (920421106032), Yuvashree V (920421106054) who carried out the work under my supervision.

SIGNATURE

Dr.R,SureshBabu,M.E.,MBA.,Ph.D.,
(Head of the Department)
Professor & Head
Department of Electronics and
Communication Engineering
And Technology, K.Vellakulam
Near Virudhunagar,

SIGNATURE

Dr.T.Prathiba,Ph.D.,M.E.,
(Course Incharge)
Assistant Professor
Department of Electronics &
Communication Engineering
Kamaraj College Engineering
& Technology, K.Vellakulam
Near Virudhunagar,

Submitted for the Report held on 5/8/23

Committee Member1 Committee Member2 Committee Member3

ABSTRACT

The demand for efficient and sustainable plant care solutions has grown with the increasing interest in urban gardening and indoor greenery. An automatic plant watering system is a technical solution designed to efficiently manage the watering needs of plants without requiring constant human intervention. This system leverages sensors and a control mechanism to monitor the soil moisture level of plants and deliver the appropriate amount of water to maintain optimal growth conditions. The main objective of this system is to alleviate the burden of manual plant watering while ensuring that plants receive the right amount of water at the right time.

The core components of the automatic plant watering system include raspberry pi 4, soil moisture sensor, servo motor and mcp3008 adc. The soil moisture sensors are strategically placed in the soil near the plant's root zone to continuously measure the moisture content. These sensors provide real-time data to the raspberry pi 4, which processes the information and determines whether the plants need watering.

TABLE OF CONTENTS

CHAPTER 1

INTRODUCTION

The cultivation and maintenance of plants have been intrinsic to human existence for centuries.one of the critical aspects of plant care is providing an adequate and consistent water supply,as fluctuations in moisture levels can severely impact plant health.The automatic plant watering system addresses these challenges by leveraging the power of automation and smart technology. This system aims to revolutionize plant care practice by automating the process of watering, minimizing the reliance on human and optimizing water usage.

CHAPTER 2

OBJECTIVE OF PROJECT

- To design a system that can automatically water plants based on sensor readings.
- To enable users to remotely monitor and control the watering system through a web interface.
- To gather data on soil moisture, temperature and humidity to analyze plant health and growth patterns over time.
- To optimize the system's power usage to minimize energy consumption and extend the life of the components.

CHAPTER 3
EXISTING SYSTEM

There are various existing systems for automated plant watering that do not rely on a raspberry pi 4. These systems might use different microcontrollers, sensors and actuators to achieve the goal of watering plants automatically. They are Arduino-based systems, ESP266/ESP32-based systems or even commercially available smart watering systems that can connect to our WiFi network or Bluetooth and controlled through a mobile app. These systems typically involve moisture sensors to detect when the soil is dry and pumps or valves to deliver water to the plants.

CHAPTER 4

PROPOSED SYSTEM

The proposed system is implemented using Raspberry pi 4 by overcoming the drawbacks of previous method. In this project sensors are connected to the raspberry pi 4 and the result can be seen in the web interface using mobile phone or laptop. By using python code we can get the soil moisture level in percentage and by using thingspeak web interface we can get the moisture level graph.

4. 1. ADVANTAGES

- Efficient water usage
- Convenience and time-saving
- No need of human intervention
- Improved plant growth

4. 2. CIRCUIT DIAGRAM

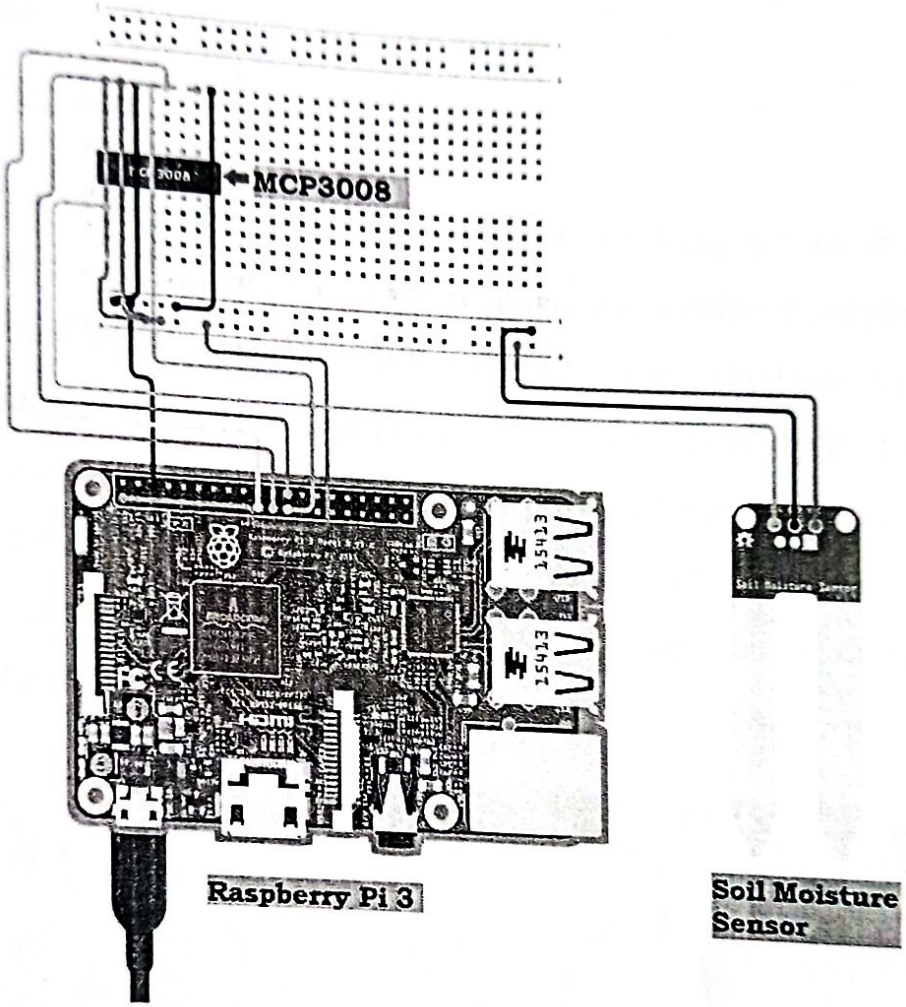


Figure 4.1.Circuit Diagram

CHAPTER 5

TOOLS AND TECHNOLOGIES

5. 1. HARDWARE

5. 1. 1. RASPBERRY PI 4

Raspberry pi 4 is a small-sized computer used Linux operating system. It is mini size computer used mostly to run larger and smart programs to achieve output quickly. A Raspberry Pi 4 board has 40 pins on it. Of the 40 pins, 26 are GPIO pins and the others are power or ground pins. we have four power pins on the Raspberry Pi, two of which are 5v pins and another two are 3.3v pins. The 5v power pins are connected directly to the Raspberry Pi's power input and we can use these pins to run low power applications. GPIOs allow to easily use hardware features and communication, directly from a computer – the Raspberry Pi microprocessor.

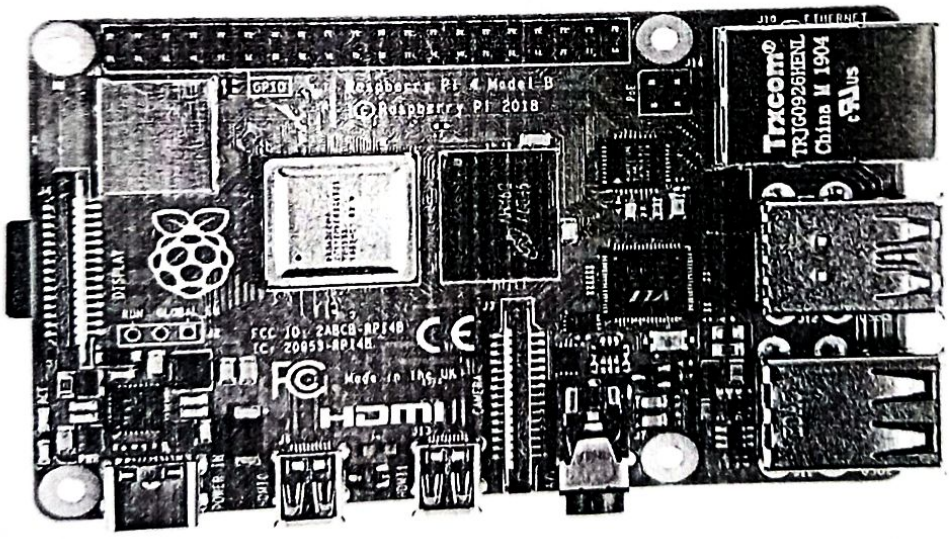


Figure 5.1.Raspbeerry pi 4

5.1.2.MCP3008 ADC

The MCP3008 device is a successive approximation 10-bit analogue-to-digital converter with on-board sample and hold circuitry. It is programmable to provide four pseudo-differential input pairs or eight single-ended inputs. It consists of 8 channels(CH0-CH7),VDD,VREF,AGND,CLK,DOUT,DIN,CS'/SHDN and DGND. It totally consists of 16 pins.

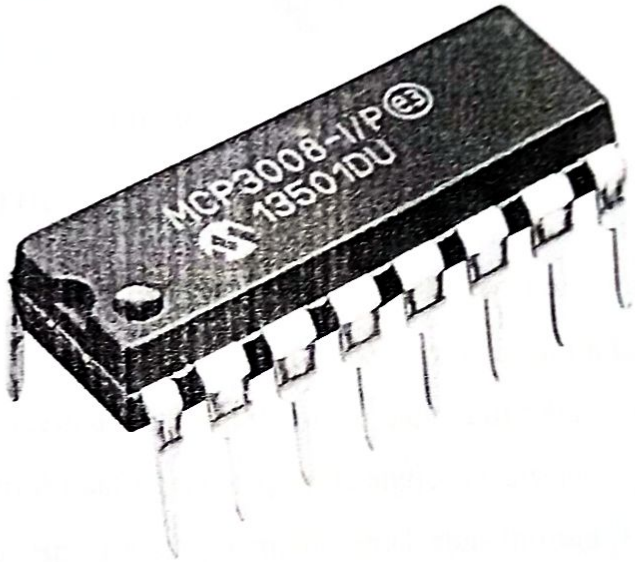


Figure 5.2.MCP3008 ADC

5.1.3.SOIL MOISTURE SENSOR

Soil moisture sensors measure soil moisture at the root zone and regulate the existing conventional irrigation timer. It is commonly used in smart agriculture or other garden automation projects to measure the moisture content present in the soil. It consists of 4 pins in which two pins, Vcc and Gnd are connected to supply voltage. The remaining two pins are digital (D0) and analog (A0) are the output pins.

Figure 5.3.Soil moisture sensor

5.1.4.SERVO MOTOR

A servo motor is a type of motor that can rotate with great precision. Normally this type of motor consists of a control circuit that provides feedback on the current position of the motor shaft, this feedback allows the servo motors to rotate with great precision. If you want to rotate an object at some specific angles or distance, then you use a servo motor. It is just made up of a simple motor which runs through a servo mechanism. If motor is powered by a DC power supply then it is called DC servo motor, and if it is AC-powered motor then it is called AC servo motor.

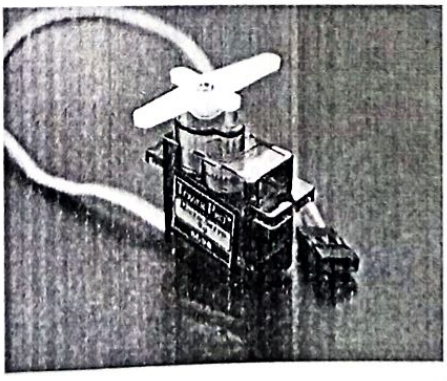


Figure 5.4.Servo motor

5. 2. SOFTWRE TOOLS

5.2.1.THINGSPEAK

ThingSpeak allows us to aggregate, visualize, and analyze live data streams in the cloud. ThingSpeak provides instant visualizations of data posted by our devices or equipment.It is an open-source software written in Ruby which allows users to communicate with internet enabled devices. It facilitates data access, retrieval and logging of data by providing an API to both the devices and social network websites.

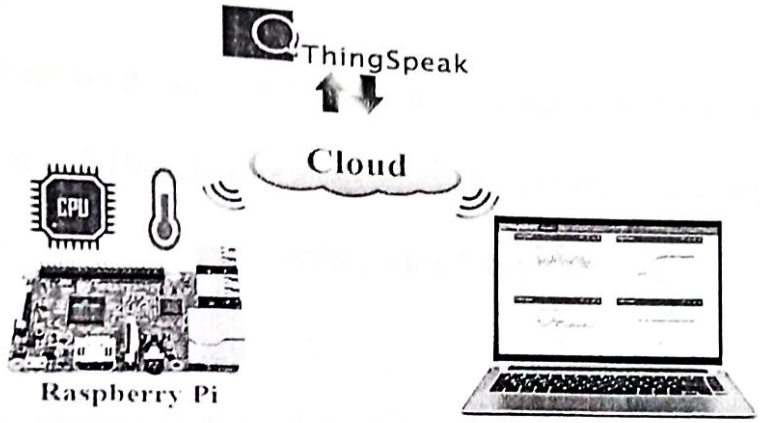


Figure 5.5.Thingspeak process

CHAPTER 6

CODE

Python code for moisture sensor

```
import RPi.GPIO as GPIO

from time import sleep

import Adafruit_MCP3008 am = Adafruit_MCP3008.MCP3008(clk = 11, cs = 8, miso = 9, mosi = 10)

while True:

moisture_value = am.read_adc(0) # Get the analog reading from the soil moist sensor

per = moisture_value * 100 / 1023 # Converting the moisture value to percentage

print("Recorded moisture value is %s percentage" % per)

if moisture_value >= 930:

print(" No water, Can you plaease water me")

elif moisture_value < 930 and moisture_value >= 350:

print(" I'm sufficient “)

elif moisture_value < 350 :

print(" Stop drowning me!")

sleep(1.5)
```

python code for servo motor

```
from gpiozero import Servo
from time import sleep
# Define the servo motor on GPIO17
servo = Servo(17)
try:
  while True:
    # Move the servo to the middle position (0 degrees)
    servo.mid()
    print("Mid position")
    sleep(2)
# Move the servo to the full left position (-90 degrees)
    servo.min()
    print("Min position")
    sleep(2)
# Move the servo to the full right position (90 degrees)
    servo.max()
    print("Max position")
    sleep(2)
```

```
except KeyboardInterrupt:
    # When you press Ctrl+C, this code will stop and cleanup
    servo.detach()
```

python code for thingspeak

```
import RPi.GPIO as GPIO
from gpiozero import MCP3008
import requests
import time
# Define GPIO pins for relay and pump
relay_pin = 17  # Change this to your relay pin number
pump_pin = 18   # Change this to your pump pin number
# Thingspeak configuration
THINGSPEAK_API_KEY = 'your_thingspeak_api_key'
THINGSPEAK_CHANNEL_ID = 'your_thingspeak_channel_id'
THINGSPEAK_FIELD = 'your_thingspeak_field_number'
# Create an MCP3008 instance for the soil moisture sensor
soil_moisture_sensor = MCP3008(channel=0)
```

```
# Set up GPIO
GPIO.setmode(GPIO.BCM)
GPIO.setup(relay_pin, GPIO.OUT)
GPIO.output(relay_pin, GPIO.LOW)
# Define a function to water the plant
def water_plant():
  GPIO.output(relay_pin, GPIO.HIGH)
  time.sleep(5)  # Adjust this time as needed
  GPIO.output(relay_pin, GPIO.LOW)
while True:
  try:
    # Read soil moisture level (adjust the values based on your sensor)
    moisture_level = soil_moisture_sensor.value
    print(f"Soil Moisture Level: {moisture_level}")
    # Check if the soil is too dry (you can adjust the threshold)
    if moisture_level < 0.4:
      print("Soil is too dry. Watering the plant...")
      water_plant()
```

```
        # Update Thingspeak channel
        payload = {THINGSPEAK_FIELD: moisture_level}
respons=requests.post(f'https://api.thingspeak.com/update?api_key={THINGSPEAK_
API_KEY}',data=payload)
        print("Thingspeak Status Code: {response.status_code}")
        time.sleep(3600)
except KeyboardInterrupt:
        GPIO.cleanup()
        Break
```

CHAPTER 7

CONCLUSION

In conclusion, an automatic plant watering system is a perfect solution that streamlines plant care by automating the watering process. By utilizing soil moisture sensors,control units and water delivery mechanisms, this system optimizes plant growth, conserves water and minimizes human intervention. Its potential for customization and integration with smart technologies further enhances its utility and convenience.

CHAPTER 8

REFERENCE

8.1.WEBSITES

- http://www.wikipedia.com
- http://www.thisoldhouse.com
- https://www.instructtables.com

8.2. JOURNALS & BOOKS

1. Abishek Gupta, Shailesh Kumawat and Shubham Garg, "Automatic plant watering system", imperial journal of International Research(IJIR),Vol-2,Issue-4, SKIT Jaipur, 2016.
2. Jonathan Gana Kolo, "design and construction of an automatic power changeover switch" in AU journal of technology, 11(2):(Oct.2007).
3. Swapnil Bhardwaj, Saru Dhir, Madhurima Hooda, "Automatic plant watering system using IoT", second International conference on green computing and internet of things(ICGCIoT),2018.

AUTOMATIC PLANT WATERING SYSTEM

BY
R.PUSHPA RATHINA
V YUVA SHREE

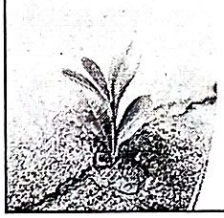
AUTOMATIC PLANT WATERING SYSTEM

- Automation is the most frequently used term in the field of electronics because it had great importance than other technologies
- The project aims at designing an advanced automatic plant watering system using Raspberry pi
- This system is designed to water plants without manual intervention. It typically consists of raspberry pi,soil moisture sensor and servo motor.

ABSTRCT

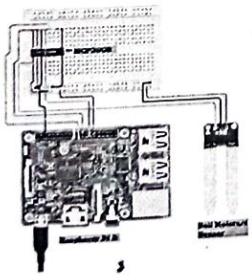
- The automatic plant watering system is a smart and efficient solution for maintaining soil moisture level in plants without manual intervention.
- First is hardware interface module which provides appropriate interface to sensors.second is software which presents system code that controls and monitors moisture level of soil.
- This automated system alleviates the burden of regular watering,making plant care more manageable and enjoyable.

INTRODUCTION



- The cultivation and maintenance of plants have been intrinsic to human existence for centuries.one of the critical aspects of plant care is providing an adequate and consistent water supply,as fluctuations in moisture levels can severely impact plant health.
- The automatic plant watering system addresses these challenges by leveraging the power of automation and smart technology.
- This system aims to revolutionize plant care practice by automating the process of watering,minimizing the reliance on human and optimizing water usage.

BLOCK DIAGRAM



5

TECHNOLOGY AND TOOLS

- HARDWARE:
- RASPBERRY PI 4 is a small-sized computer used Linux operating system. It is mini size computer used mostly to run larger and smart programs to achieve output quickly.
- SOIL MOISTURE SENSOR is a type of sensor used to measure the volumetric water content of the soil.
- SOFTWARE:
- PYTHON CODE is used to display the moisture level of the soil.

5

RESULT

- The automatic plant watering system using internet of things has been experimentally proven to work satisfactorily by connecting simple appliances to it and the appliances were successfully controlled remotely through internet.
- Automatic plant watering is the most convenient method for better plant care.

CONCLUSION

The automatic plant watering system represents a transformative solution that bridges the gap between technology and plant care.

By this system we can create a efficient,sustainable way to cultivate and nurture plants in both urban and rural areas.

THANK YOU!

T. Ramya
VAC coordinator

HOD/ECE