DEPARTMENT OF MECHANICAL ENGINEERING

Value Added Course

on

IoT

Academic Year	:	2024-2025 (ODD Semester)
Date / Days	:	08.07.2024 to 16.07.2024 / 7 Days
Duration	:	48 Hours
Organized by	:	Quantanics Techserv, Madurai

Coordinators

N.R.MADHAN

Verified.

S. Athikumari
VAC Incharge

HoD/Mech

Dean (Academic Courses)

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 MECHANICAL ENGINEERING

Content	Details
Academic Year	2024-2025 (ODD Semester)
Date	08.02.2024 to 16.07.2024 (7 Days)
Name of the Value-added course	IoT
Duration	48 Hours
No of Credit	3 Credit
Category	Theory (15 Hours) and Lab (38 hours)
Organized by	Quantanics Techserv, Madurai
External Coordinator	Er. A. Kesavan, CEO, Quantanics Techserv, Madurai
Three Member Committee Members	1. Dr. S. Thanga Kasi Rajan, ASP& HoD/Mech 2. Er. R.Sakthivel Murugan, AP/Mech 3. Er. N. R. Madhan, AP/Mech
Internal Coordinators	Er. N. R. Madhan, AP/Mech Dr. B.K. Parrthiban, AP/Mech

Coordinators

N. R. MADHAN

HoD/Mech

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

APPROVAL BOOK

Book No. | MECH | Date : 16 - 05 - 2024

SL. No. **3**

VALUE ADDED COURSE

Name of the Programme : IoT with Product Development

Date : 08 - 07 - 2024 to 12.07.2024 & 15/07 to 16/07/24

No of days : 7 Days

Conducted by : Team from Quantanics Techserv, madurai.

Amount : {Rs 1200/ students + GST} = 31 × 1200 = 37,200 1750 54,250 + 18% GST [Total]

Total = Rs 64,015

No of students : 31 Nos.

Requirements : Lunch & Snacks for trainers [7 Days]

Amount may please be sanctioned the above mentioned fees.

Signature of Staff
N. R. MADHAN, AP/MECH.

HoD 16/05/24

PRINCIPAL

OFFICE USE

: Value Added Course Ext.

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

O.M.

Secretary

Madhan.N.R <madhanmech@kamarajengg.edu.in>

Mon 24, 2023 12:26 PM

To:22UME <22ume@kamarajengg.edu.in>
Cc:MUTHU NATARAJAN.S <muthunatarajanmech@kamarajengg.edu.in>;MECH <mech@kamarajengg.edu.in>;HODMECH <hodmech@kamarajengg.edu.in>

Dear students,

The Department of Mechanical Engineering intends to offer a value-added course on IoT to third-year students from **July 8th to July 17th, 2023.** You are instructed to attend the programme without fail.

Training details

1. You are grouped as a team of 3 members.

2. Training kit (IoT Devices) will be given to each team. It will enhance your understanding level in this field.

3. Each team must do a project using this kit.

4. At the end of the programme, you have to demonstrate your project Work in front of three Value Added Course committee members. Based on this, internal mark will be awarded.

Examination details

Mark Allocation

Sl. No	Description	Maximum Mark awarded
1	Internal Evaluation (Based on your presentation)	40 marks
2	External Evaluation (Based on your project work)	60 marks

We expect your kind cooperation.

With Regards,
Madhan N R,
Assistant Professor,
Mechanical Department,

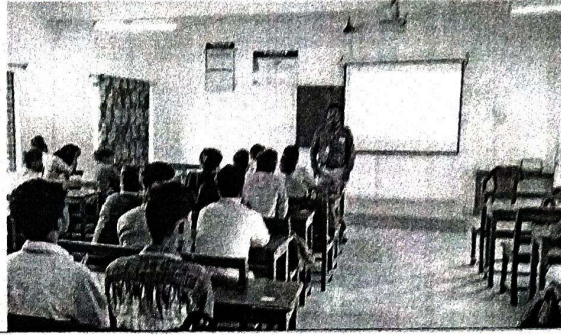# KAMARAJ

College of Engg and Tech,
Virudhunagar.

DEPARTMENT OF MECHANICAL ENGINEERING

Three-member committee meeting for value added course selection

Agenda		**Value Added Course Selection Meeting**
Date	:	03.07.2024
Time	:	09.10 AM
Venue	:	E14 Hall, Academic Block Four, Third Floor
Members Present	:	**Three Member Committee Members** 1. Dr. S. Thanga Kasi Rajan, ASP& HoD/Mech 2. Er.R.Sakthivel Murugan, AP/Mech 3. Er. N.R. Madhan, AP/Mech **Chairperson** 1. Dr.S.Muthu Natarajan, AP/Mech **Co-ordinators** 1. Er. N.R. Madhan, AP/Mech 2. Dr.B.K. Parrthiban, AP/Mech **Class representative (2022 – 2026 Batch)** 1. Mr. Naveen N.M. (22UME012), III Year/ Student 2. Mr. Dhanush R.K. (22UME013), III Year/ Student 3. Mr. Naveen Sarathi.V (22UME022), III Year/ Student 4. Mr. Kishore Vikram.N (22UME029), III Year/ Student

Minutes of the Meeting	:	It is optional to complete a Value-Added Course for Regulation 2021. In this regard a three-member committee has been formed and a meeting is organized to select the course for registration.
		• Meeting started by 09.10 AM. Dr. S. Thanga Kasi Rajan, Associate Professor & Head of the Department, welcome the gathering. He has advised to maintain SOP for value added course.
		• Er. N. R. Madhan, Assistant Professor & Value added course incharge has proposed course offered by
		    o Quantanics Techserv, Madurai offering IoT.
		• Based on the suggestion and feedback given by the 2021-2025 Batch students, 3 committee members for Value added course and student representative, "IoT" course is agreed to take in this V semester for 2022-2026 Batch students. Courses were selected by the students based on their interested.
		Justification for the Courses selection:
		The justification for the course selection were as follows
		    i. These courses will be useful for their project work
		    ii. It is a 48-hour courses (3 Credits)
		    iii. These courses are useful to meet the Industrial Needs
		    iv. These courses are in emerging areas.

Proof		

Three Member Committee Members
Dr. S. Thanga Kasi Rajan, ASP & HoD/Mech
Er.R.Sakthivel Murugan, AP/Mech
Er. N.R. Madhan, AP/Mech

Chairperson
Dr. S.Muthu Natarajan AP/Mech

HoD/Mech

Dean Academics

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Department of Mechanical Engineering

Title of the Program : Value Added Course on "IoT"

Date: 08.07.2024 to 16.07.2024 (7 Days)

Participants : III year (2022 – 2026 Batch)

Academic Year: 2024 – 2025 ODD

Conducted by : Quantanics Techserv, Madurai.

Venue : KCET-MECH-CAD Lab

Syllabus

IoT Introduction

IoT Introduction - Basics of ATMEL328p C Programming - Basic Electronics Setting up Arduino IDE – LED Blinking Traffic Light System Diving deep into ATMEL328p C programming (functions) LED control using push button – Motor switching on using relay C pointers - arrays and memory allocation.

Sensors and Types of ATMEL Controller

Temperature sensor to display temperature - ESP 32/ ESP8266 architecture- LED and Switch Control basics using push buttons, interfacing soil moisture sensor to check soil moisture. Interfacing Turbidity sensor for checking water turbidity.

Embedded Platform Introduction and dive in

Arduino IDE introduction - Boards types - Basic Electronics, Tools and Sensors - Setting up Arduino IDE - LED Blinking - Diving deep into C programming (functions) LED control using push button
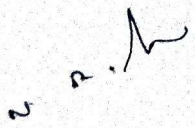
Sensors and Types of Arduino Controller

Temperature sensor to display temperature - ESP 32/ ESP8266 architecture- LED and Switch Control basics using ESP Display Interfacing - 7 segment - LCD display - Keypad – Arduino IOT Could Mobile App introduction with example- Arduino Cloud Introduction with example

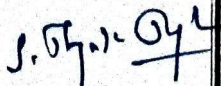**IoT Protocols and Applications**

ADC Conversion - keypad relay control - USART - USART Communication Timer – Counter Clock – PWM - PWM Example - Project GSM - GPS GSM - GPS data - Microcontroller EEPROM - Temperature & Humidity - PIR CLOUD – MQTT - Home automation - Robot control.

Product Development

Design and Integration with Cloud and Control Stepper Motor – Servo Motor integration- Temperature Monitoring and Control and Alter System – Hydraulic Sensor Monitoring and Could integration – Speed and Vibration analysis System and Modbus System Design and Analysis.

Coordinators

N. R. MADHAN

HoD/Mech

Department of Mechanical Engineering

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Course Outcomes

Students will be able to

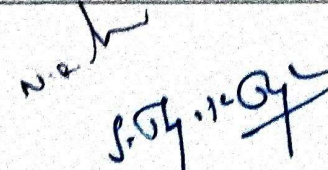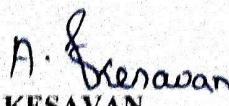| Course Outcomes		Details
CO1	:	Gain a solid understanding of IoT fundamentals and microcontroller programming.
CO2	:	Develop practical skills in interfacing various sensors and actuators.
CO3	:	Master advanced C programming techniques specific to IoT applications.
CO4	:	Be proficient in using Arduino IDE and integrating IoT devices with cloud services.
CO5	:	Be capable of designing and developing complete IoT products and systems.

Coordinators

N. R. MADHAN

HoD/Mech

TAX INVOICE

(Original for buyer)

QUANTANICS TECHSERV PVT LTD 206, VELLAIKANNU NAGAR, THENI MAIN ROAD, MADURAI - 625016 Email Id: support@quantanics.in GST NO : 33AAACQ5974E1ZG	Invoice No QTSM/24-25/0003	Dated: 13.07.2024
	Suppliers Ref	Other Reference Nil
	Buyers Order No. Ref:	Dated: -
	Dispatched Doc No.	Dated: -
To The Principal, Department of Mechanical Engineering, Kamaraj College of Engineering and Technology, S.P.G.C.Nagar, Virudhunagar-626001	Mode of Dispatch: NILL	Destination: Virudhunagar
	Terms of Delivery -	

S. No	Description of Goods	Qty	Unit Rate	Amount
1.	IoT (Internet of Things) Value Added Course	31	1750/ Head	54250
	BANK DETAILS	**Taxable Amount**		54250
	Name of the Bank: **INDUSIND BANK** Account Name: **QUANTANICS TECHSERV PVT LTD**	**Total GST (18%)**		9,765
	Account No: 201003764986 IFSC CODE: INDB0001345	**Grand Total (Rs.)**		64015

Amount Chargeable (In Words) (Sixty four thousand and fifteen rupees only)

Declaration

We declare that this invoice shows the actual price of the goods described and that all particulars are true and correct

For Quantanics Techserv Pvt Ltd

A.KESAVAN

CEO

KAMARAJ
COLLEGE OF ENGINEERING & TECHNOLOGY

(An Autonomous Institution) AFFILIATED TO ANNA UNIVERSITY CHENNAI
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Conducted by : Quantanics Techserv, Madurai.	Venue : KCET-MECH-CAD Lab

Approval of Board of Study Meeting

Board of Study Meeting: VI	Mode: hybrid mode
Date & Timing: 11.03.2023 & 10.00 AM	Page No: 15 of 16

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

Item No.	Description	Suggestions / Comments from the BoS Members
006.06.01	Anna University New Amendment (Honours / Honours in same discipline / Minor)	Dr.S. Thangakasirajan, AP/Mech Presented the new amendment given by Anna University. Bos members accepted the amendments.
006.06.02	Pass Percentage of students	Dr.B. Balavairavan, AP/Mech Presented the Pass percentage year wise and course wise. Bos members accepted the results.
006.06.03	Value Added Courses offered/ Planned for the academic year: 2023 - 2024	Mr. N.R. Madhan, AP/Mech Presented the Value-added course planned for the academic year 2022 - 2023. BoS members suggested some value-added courses for next academic year: LabVIEW, Computational fluid dynamics, Image processing and coding, Deep learning in Metallurgy, NX CAD, CATIA and SolidWorks.

Coordinators

N. R. MADHAN

HoD/Mech