## DEPARTMENT OF MECHANICAL ENGINEERING

Value Added Course

on

# Internet on Things

| | | |
|---|---|---|
| Academic Year | : | 2022-2023 (EVEN Semester) |
| Date | : | 04.01.2023 to 09.01.2023 |
| Duration | : | 45 Hours |
| Organized by | : | Quantanics Techserv (P) Ltd, Madurai |

Coordinator

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**).

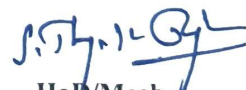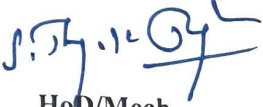## DEPARTMENT OF MECHANICAL ENGINEERING

| Content | Details |
|---|---|
| Academic Year | 2022-2023 (EVEN Semester) |
| Date | 04.01.2023 to 09.01.2023 |
| Name of the Value-added course | Internet on Things |
| Duration | 45 Hours |
| No of Credit | 2 Credit |
| Category | Theory (15 Hours) and Lab (30 hours) |
| Organized by | Quantanics Techserv (P) Ltd, Madurai |
| External Coordinator | A. Kesavan, CEO Quantanics Techserv Pvt Ltd, Madurai |
| Three Member Committee Members | 1. Dr. S.S. Saravana kumar, ASP & HoD/Mech<br>2. Dr. S. Senthil, Prof. & Principal<br>3. Er. N.R. Madhan, AP/Mech |
| Internal Coordinators | Er. N.R. Madhan, AP/Mech |

**Coordinator**

**HoD/Mech**

**Dean (Academic Courses)**

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Submitted to the SECRETARY for approval through the PRINCIPAL

Book No. | MECH | Date 17.12.2022

SL.No. 37

Value Added Course

Name of the course : IoT in Manufacturing

Duration [Day] : 5 DAYS [Jan 4 to Jan 7]

No of students : 23 Nos.

Course fees : Rs 1250/- [Inclusive Tax]

Conducted by : A. KESAVAN, CEO,

QUANTANICS TECHSERV PVT LTD,

MADURAI.

Approval may please be sanctioned for above mentioned amount.
we have to credit 50% payment as advance before commencement of
the course.

N.Q. 19/12/2022

Signature of Faculty | HOD | PRINCIPAL

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**OFFICE USE**

1) Account Head : Value added Course Expenses

2) Budget allotted :

3) Amount committed / Spent sofar :

4) Balance available :

OM | Treasurer | Secretary

**From:** Madhan.N.R
**Sent:** 03 January 2023 16:15
**To:** 21UME; CIPET CSTS Madurai; atpdc.cipetmdu@gmail.com; Kesavan
**Cc:** MECH; Maheswari.A; SRI RAMA PRIYA.R.P
**Subject:** Circular | VAC | IoT/CNC coding | Venue

**Dear students,**

The Department of Mechanical Engineering intends to offer a value-added course on IoT/CNC coding to second-year students from **January 4 to January 9, 2023.** A list of students interested in IoT/CNC coding is attached.

Venue Details

| Course | Date | Venue |
|---|---|---|
| IoT | 04.01.2023 to 07.01.2023 | MECH CAD Lab |
| | 09.01.2023 | MT Lab |
| CNC Coding | 04.01.2023 to 07.01.2023 | CIPET Madurai |
| | 09.01.2023 | MECH CAD Lab |

Students are instructed to maintain discipline and to attend all sessions without missing any.

With Regards,

**Madhan N R,**
Assistant Professor,
Mechanical Department,

# KAMARAJ
College of Engg and Tech,
Virudhunagar.

## Department of Mechanical Engineering

**Title of the Program : Value Added Course on "IoT"**          **Date: 04.01.2023 to 09.01.2023**

**Participants : II year**

**Conducted by : Quantanics Techserv (P) Ltd, Madurai**          **Venue : KCET - MECH – CAD Lab**

### Syllabus

### IoT Introduction

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

### Sensors and Types (ESP32 & ESP8266)

Temperature sensor to display temperature - ESP 32/ ESP8266 architecture- LED and Switch Control basics using ESP Display Interfacing - 7 segment - LCD display - Keypad.
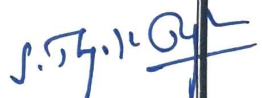
### IoT Protocols and ESP-32 Board

 COMPONENTS & SENSOR LIBRARY - HTTP SERVER - Wi-Fi CONNECT CONFIGURATION –  OTA FIRMWARE –Open Source Cloud Configuration -MQTT Integration.

### Projects:-

Temperature & Humidity Measuring – PIR Sensor (Motion Sensor) – Fluid Level Measuring – Smart Agriculture – People Count Device (IN&OUT) Monitoring and controlling Device and application ext

**Coordinators**                                                                                                          **HoD/Mech**

## Department of Mechanical Engineering

Title of the Program : Value Added Course on "IoT"  Date: 04.01.2023 to 09.01.2023

Participants : II year

Conducted by : Quantanics Techserv (P) Ltd, 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: 14 of 16

**006.05.03 :  Value Added Courses offered if any**

> Dr. B.Balavairavan informed to BoS members that the following value added courses offered for Mechanical Engineering students and the ratification needed to include the credits earned by students from value added courses as over and above credits.

| Sl.No. | Name of the Course | Year | Offered by | Date | No of Students | No of hours |
|--------|--------------------|------|------------|------|----------------|-------------|
| 1 | NX-CAD for Beginners | III/Mech | CoE-Manufacturing, NITT | 23.08.2022 to 28.08.2022 | 48 | 46 |
| 2 | CNC Coding with live Demo | II/Mech | CIPET, Madurai | 04.01.2023 to 07.01.2023 | 20 | 23 |
| 3 | IoT | II/Mech | Quantanics Techserv (P) Ltd, Madurai | 04.01.2023 to 09.01.2023 | 23 | 20 |

All the BoS members ratified and approved the same.

Coordinators  HoD/Mech

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## DEPARTMENT OF MECHANICAL ENGINEERING

### Three-member committee meeting for value added course selection

| Agenda | | **Value Added Course Selection Meeting** |
|---|---|---|
| Date | : | 02/01/2023 |
| Time | : | 03.00 PM |
| Venue | : | HoD/Mech Cabin, Academic Block E, Third Floor |
| Members Present | : | **Three Member Committee Members**<br>1. Dr. S.S. Saravana kumar, ASP & HoD/Mech<br>2. Dr. S. Senthil, Prof. & Principal<br>3. Er. N.R. Madhan, AP/Mech<br>**UG Coordinator**<br>1. Dr. S. Thanga Kasi Rajan, AP/Mech<br>**Chairperson**<br>1. Er. N.R. Madhan, AP/Mech<br>**Domain Experts**<br>1. Dr. P. Narayanasamy, ASP/Mech<br>2. Dr. M. Prithiviraj, AP/Mech<br>3. Er. N.R. Madhan, AP/Mech<br>**Class representative (2021 – 2025 Batch)**<br>1. Mr. Hariharan.N (21ume011), II Year/ Student<br>2. Mr. Thirumurugan.P (21ume020), II Year/ Student<br>3. Ms. Alitia B Almeda (21ume029), II Year/ Student<br>4. Mr. Kishore.S (21ume033), II Year/ Student |
| Minutes of the Meeting | : | 1. 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.<br><br>• Meeting started by 3.00 PM. Dr. S.S. Saravana Kumar, Associate Professor & Head of the Department, welcome the gathering.<br>• Er. N. R. Madhan, Assistant Professor & Chairperson of 2021-2025 batch has proposed various courses offered by<br>    ○ CIPET, Madurai offering CNC Coding and<br>    ○ Quantanics Techserv (P) Ltd, Madurai, offering Internet on Things.<br>• Dr.S.Thanga Kasi Rajan, Assistant Professor has advised to maintain SOP for value added course.<br>• Based on the suggestion given by the Subject Expects, 2021-2025 Batch Chairperson, 3 committee members for Value added course and student representative, "CNC coding" and "IoT" courses are agreed to take this IV semester for 2021-2025 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 her project work
  ii.  It is a 45-hour courses (2 Credits)
  iii. These courses are useful to meet the Industrial Needs
  iv.  These courses are in emerging areas.

**Three Member Committee Members**
Dr. S.S. Saravana kumar, ASP & HoD/Mech
Dr. S. Senthil, Prof. & Principal
Er. N.R. Madhan, AP/Mech

**UG Coordinator**
Dr. S. Thanga Kasi Rajan, AP/Mech

**Chairperson**
Er. N.R. Madhan, AP/Mech

**Domain Experts**
Dr. P. Narayanasamy, ASP/Mech
Dr. M. Prithiviraj, AP/Mech
Er. N.R. Madhan, AP/Mech

**HoD/Mech**

**Dean Academics**

## Department of Mechanical Engineering

**Title of the Program : Value Added Course on "IoT"**          **Date: 04.01.2023 to 09.01.2023**
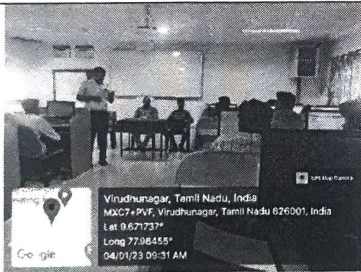
**Participants : II year**

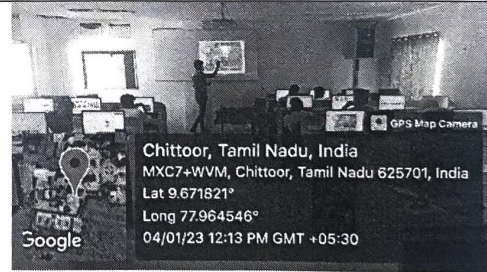**Conducted by : Quantanics Techserv (P) Ltd, Madurai**          **Venue : KCET - MECH – CAD Lab**

### Summary report

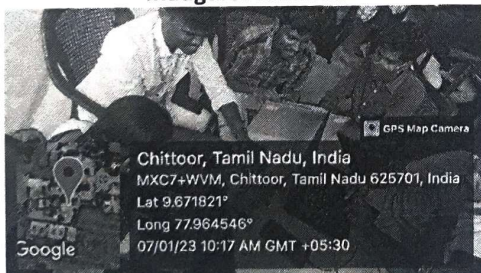| | | |
|---|---|---|
| **Day 1**<br>**(04.01.2023)** | : | Programme was inaugurated by the HoD/Mech and Er.Kesavan, proprietor of Quantanics Techserv (P) Ltd. Importance of IoT in Manufacturing was explained by him. Various controllers and its model various were explained. |
| **Day 2**<br>**(05.01.2023)** | : | Students learnt the various controllers and microprocessor with live demo. Importance and difference application of controllers and microprocessor were explained. |
| **Day 3**<br>**(06.01.2023)** | : | Speaker explained the basics constructions of Arduino UNO. Students was creating the official login in open software which is adaptable for Arduino UNO. All the students were simulating his programme using open-source software. |
| **Day 4**<br>**(07.01.2023)** | : | During the entire day, students were updating various configuration of programme from opensource software to Arduino UNO. Team based work was assigned to the students by using temperature sensor, pressure sensor and linear actuator with sensor. |
| **Day 5**<br>**(09.01.2023)** | : | Students implement their project in the allotted system. Based on the outcome, evaluation was done by the team from Quantanics Techserv. |

### Photo Proof



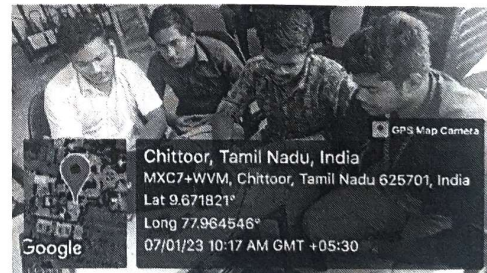**Inaugural function**



**Demonstration session**



**Students is working on the pressure sensor**



**Students is working on the flow sensor**

**Coordinators**                                                                 **HoD/Mech**

# QUANTANICS TECHSERV PVT LTD

NO.206, VELLAIKANNU, NAGAR, THENI MAIN RD, MADURAI, TAMIL NADU 625016

## VALUE ADDED COURSE COMPLETION
# CERTIFICATE

This is to certify that Mr./Ms. ALITIA.B.ALMEDA has attended Value Added Course on **Internet of Things** offered by **Quantanics TechServ Pvt. Ltd**, Madurai from **04.01.2023 to 09.01.2023** in association with the Department of Mechanical Engineering, Kamaraj College of Engineering and Technology, Virudhunagar.

DIRECTOR

CEO