



CANARA ENGINEERING COLLEGE

An Autonomous Institution, Approved by AICTE, Accredited by NAAC with A Grade
SUDHINDRA NAGARA, BENJANAPADAVU, BANTWAL, MANGALURU - 574219



Department of Computer Science and Engineering

Date: 09-09-2025

Place: Benjanapadavu

From
Head of the Department
Department of CS&E
Canara Engineering College, Bantwal

To
The Principal
Canara Engineering College, Bantwal

Through
Dean - Academics
Canara Engineering College, Bantwal.

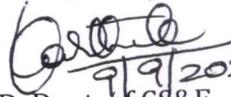
Respected Sir,

Subject: Request for procurement of components for IoT Laboratory - Regarding

As per the VTU syllabus for the IPCC course - *Internet of Things (BCS701)*, the inclusion of IoT components is essential. To address this requirement and to enable students to undertake projects in the IoT domain, our department has prepared a proposal for the procurement of the necessary components. The proposal, submitted by Dr. Gurudeva S. H., Dr. Rakshith M. D. and Ms. Sushma, was reviewed by the Departmental Purchase Committee. After due evaluation, the committee has recommended Manohar Radio House, citing their proven quality, competitive pricing, and reliable service.

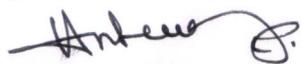
We look forward to your kind approval and necessary action.

Regards


9/9/2025
HoD, Dept. of CS&E

Items are required to
conduct VII Lab as per the
Syllabus lllll 11/9/25

Forwarded with recommendations for the
purchase
The same is being discussed in dept Review meeting
forwarded for approval.
Rs 461355
Manohar Radio House



**Quotation
Original**

MANOHAR RADIO HOUSE MAIDAN 1ST CROSS ROAD, HAMPANKATTA, MANGALURU PIN: 575001 Phone: 9448058377 GSTIN/UIN: 29AAEFM3327J1Z5	Quotation No. QN/25/00123	Dated 13-08-2025
	Place of Supply 29 - Karnataka	Mode/Terms of Payment Paid - Cash
	Reference No. & Date	Due Date

Buyer (Bill to)
CANARA ENGINEERING COLLEGE

SL	Description of Goods/Services	Qty	Unit	Rate	Disc.%	Disc.	Amount
1	NANO BOARD with usb cable	30.00	NOS	280.00			7118.64
2	LED	150.00	NOS	1.00			127.12
3	0.25 WATT RESISTORS 220e	30.00	NOS	1.00			25.42
4	RELAYS 5v	30.00	NOS	20.00			508.48
5	ULTRASONIC SENS	30.00	NOS	75.00			1906.78
6	DC MOTOR 12v/plastic geared	30.00	NOS	30.00			762.72
7	LDR MODULE	30.00	NOS	40.00			1016.94
8	MODULE/SENSOR N dht22	30.00	NOS	250.00			6355.94
9	4*4 MATRIX KEYPAD MODULE	30.00	NOS	60.00			1525.42
10	SINGLE STRAND WIRES roll	10.00	NOS	350.00			2966.10
11	TRANSISTORS bc547	30.00	NOS	1.00			25.42
12	ESP32 WIFI MODULE	10.00	NOS	375.00			3177.96
13	MQ GAS SENSOR MODULE	30.00	NOS	120.00			3050.84
14	MODULE/SENSOR N logic level shifter	10.00	NOS	70.00			593.22
15	DIODES 4007	30.00	NOS	1.00			25.42
16	SOIL M SENSOR	30.00	NOS	50.00			1271.18
17	SERVO SG90	30.00	NOS	80.00			2033.90
18	WATER LEVEL SENSOR	30.00	NOS	40.00			1016.94
19	IR MODULE	20.00	NOS	30.00			508.48
20	JUMPER WIRE ,,RIBBON ff 40 pcs set	5.00	NOS	80.00			338.98
21	JUMPER WIRE ,,RIBBON mf 40 pcs set	5.00	NOS	80.00			338.98
22	resister mix nn 220e	30.00	NOS	0.50			12.72
23	LCD DISP 16*2 ith i2c board	30.00	NOS	180.00			4576.28
							39283.88
				9			3535.56
				9			3535.56
	Total	690.00					46355.00

P.O. may be issued

Selected

 Scan to Pay	Account Name: Manohar Radio House Account No. 007005300000187 Dhanlaxmi Bank, MG Road, Mangalore IFSC: DLXB0000070	for MANOHAR RADIO HOUSE
	Authorised Signatory	

DO - CHSR - Project :- CSE
[Signature]

**Quotation
Original**

MANOHAR RADIO HOUSE
 MAIDAN 1ST CROSS ROAD, HAMPANKATTA, MANGALURU
 PIN: 575001
 Phone: 9448058377
GSTIN/UIN: 29AAEFM3327J1Z5

Quotation No. QN/25/00123	Dated 13-08-2025
Place of Supply 29 - Karnataka	Mode/Terms of Payment Paid - Cash
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Buyer (Bill to)
CANARA ENGINEERING COLLEGE

Amount Chargeable (in words): **Forty Six Thousand Three Hundred Fifty Five Rupees Only**
 Tax Amount (in words): **Seven Thousand Seventy One Rupees And Twelve Paise Only**

E.&O.E

HSN/SAC	Taxable Value	Central Tax		State Tax		Total Tax Amount
		Rate	Amount	Rate	Amount	
8538						
8541	7118.64	9%	640.68	9%	640.68	1281.36
8533	152.54	9%	13.73	9%	13.73	27.46
85364900	25.42	9%	2.29	9%	2.29	4.58
85381010	508.48	9%	45.76	9%	45.76	91.52
8501	19406.76	9%	1746.62	9%	1746.62	3493.24
85423100	2796.62	9%	251.69	9%	251.69	503.38
85441990	1016.94	9%	91.53	9%	91.53	183.06
85412900	3644.06	9%	327.97	9%	327.97	655.94
85331000	25.42	9%	2.29	9%	2.29	4.58
85312000	12.72	9%	1.14	9%	1.14	2.28
	4576.28	9%	411.86	9%	411.86	823.72
Total	39283.88		3535.56		3535.56	7071.12



Account Name: Manohar Radio House
 Account No. 007005300000187
 Dhanlaxmi Bank, MG Road, Mangalore IFSC: DLXB0000070

for MANOHAR RADIO HOUSE

 Authorised Signatory

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Page No. 2



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SUDHINDRA NAGARA, BENJANAPADAVU, BANTWAL, MANGALURU - 574219



Department of Computer Science and Engineering

Date: 09-09-2025

Place: Benjanapadavu

From

Dr. Rakshith M D, Dr. Gurudeva S Hiremath & Ms. Sushma
Faculty, Department of CS&E
Canara Engineering College, Bantwal.

To

Head of the Department
Department of CS&E
Canara Engineering College, Bantwal.

Respected Sir,

Subject: Request for procurement of components for IoT Laboratory – Regarding

As per the VTU syllabus for IPCC course – Internet of Things (BCS701), requires IoT components. To facilitate this, our department proposes the procurement of essential components, which will also, enhances students to do projects on IoT. Three quotations from various vendors have been taken & the proposals were reviewed in Departmental Purchase Committee meeting, which recommended Manohar Radio House for quality, competitive pricing, and service reliability. The requirement has been planned to support 30 student teams (200 students across Sections A, B, and C).

We look forward to your kind approval and necessary action.

Sl.No	Vendor Details	Price Quoted
1	Kakunje Software	Rs. 50,595/-
2	Karunadu Technologies	Rs. 1,50,000/-
3	Manohar Radio House	Rs. 46,355/-

→ selected

Regards

Dr. Rakshith M D

Dr. Gurudeva S Hiremath

Ms.Sushma

Enclosures:

1. Copy of the VTU syllabus (BCS701 – Internet of Things)
2. Quotation from Manohar Radio House (recommended vendor)
3. Comparative quotations from two other vendors

Forwarded for approval
A. Hiremath
9/9/25

Internet of Things		Semester	VII
Course Code	BCS701	CIE Marks	50
Teaching Hours/Week (L:T:P: S)	3:0:2:0	SEE Marks	50
Total Hours of Pedagogy	40 hours Theory + 8-10 Lab slots	Total Marks	100
Credits	04	Exam Hours	03
Examination nature (SEE)	Theory/practical		
Course objectives:			
<ul style="list-style-type: none"> • Understand about the fundamentals of Internet of Things and its building blocks along with their characteristics. • Understand the recent application domains of IoT in everyday life. • Understand the protocols and standards designed for IoT and the current research on it. • Understand the other associated technologies like cloud and fog computing in the domain of IoT. • Improve their knowledge about the various cutting-edge technologies in the field IoT and machine learning applications. • Gain insights about the current trends of machine learning and AI techniques used in IoT to orient towards the present industrial scenario. 			
Teaching-Learning Process (General Instructions)			
These are sample Strategies; that teachers can use to accelerate the attainment of the various course outcomes.			
<ol style="list-style-type: none"> 1. Use of PowerPoint presentation 2. Think -pair and share techniques 3. Workshop on Arduino and Raspberry Pi 4. Usage of Tinker Cad tool 5. Overview of the real-world applications of IoT from the published papers 			
MODULE-1			
Introduction to Internet of Things: Introduction, Physical design of IOT, Logical Design of IOT, IOT enabling technologies, IOT Levels & Deployment Templates.			
Textbook : Ch.1			
MODULE-2			
IOT and M2M: Introduction: M2M, Difference between IoT and M2M, SDN and NFV for IOT, IOT System Management with NETCONF-YANG, Need for IOT Systems Management, Simple Network Management Protocol (SNMP), Network operator requirements, NETCONF, YANG, IoT Systems Management with NETCONF-YANG.			
Textbook: Ch. 3.1-3.4,4.1-4.6			
MODULE-3			
IoT Platforms Design Methodology: Introduction, IoT Design Methodology, Case Study on IoT System for Weather Monitoring, IoT Systems - Logical Design using Python: Introduction, Installing Python, Python Data Types and Data structures, Control flow, Functions, Modules, Packages, File Handling, Operations, Classes, Python Packages of Interest for IoT.			
Textbook 1: Ch.5.1-5.3,6.2-6.11			
MODULE-4			
IoT Physical Devices & End points: What is a IoT Device, Raspberry Pi, About the Board, Linux on Raspberry Pi, Raspberry Pi interfaces, Programming Raspberry Pi with Python, Case Studies illustrating IoT design – Home Automation, Cities, Agriculture.			
Textbook : Ch. 7.1-7.6,9.2,9.3,9.5			
MODULE-5			

Data Analytics for IoT: Introduction, Apache Hadoop, Using Hadoop MapReduce for Batch Data Analytics, Apache Oozie, Apache Spark, Apache Storm, Using Apache Storm for Real-time Data Analysis.

Textbook: Ch.10

PRACTICAL COMPONENT OF IPCC (May cover all / major modules)

Sl.NO	Experiments
1	Develop a program to blink 5 LEDs back and forth.
2	Develop a program to interface a relay with Arduino board.
3	Develop a program to deploy an intrusion detection system using Ultrasonic and sound sensors.
4	Develop a program to control a DC motor with Arduino board.
5	Develop a program to deploy smart street light system using LDR sensor.
6	Develop a program to classify dry and wet waste with the Moisture sensor (DHT22).
7	Develop a program to read the pH value of a various substances like milk, lime and water.
8	Develop a program to detect the gas leakage in the surrounding environment.
9	Develop a program to demonstrate weather station readings using Arduino.
10	Develop a program to setup a UART protocol and pass a string through the protocol.
11	Develop a water level depth detection system using Ultrasonic sensor.
12	Develop a program to simulate interfacing with the keypad module to record the keystrokes.

Course outcomes (Course Skill Set):

At the end of the course, the student will be able to:

At the end of the course, the student will be able to :

- Explain the evolution of IoT, IoT networking components, and addressing strategies in IoT. C
- Analyze various sensing devices and actuator types.
- Demonstrate the processing in IoT.
- Apply different connectivity technologies.
- Elaborate the need for Data Analytics and Security in IoT.

Assessment Details (both CIE and SEE)

The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 40% of the maximum marks (20 marks out of 50) and for the SEE minimum passing mark is 35% of the maximum marks (18 out of 50 marks). A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/course if the student secures a minimum of 40% (40 marks out of 100) in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together.

CIE for the theory component of the IPCC (maximum marks 50)

- IPCC means practical portion integrated with the theory of the course.



Kakunje Software[®]
engineering ideas



Quotation

Sl. No	Component	Qty	Rate (₹)	Total (₹)(INCLUDING 18% GST)
1	NANO Board with USB cable (commercial)	30	250	₹7500
2	LEDs	150	1.5	₹225
3	0.25 Watt Resistors	30	1.5	₹45
4	Relays 5V	30	80	₹2400
5	Ultrasonic sensor	30	100	₹3000
6	DC Motor (Normal)	30	200	₹6000
7	LDR sensor	30	5	₹150
8	DHT22 sensor	30	120	₹3600
9	Moisture sensor	30	75	₹2250
10	Servo motor	30	100	₹3000
11	Water level depth sensor	30	50	₹1500
12	4x4 Matrix Keypad Module	30	75	₹2250
13	Single Strand Wires	10(Rolls)	300	₹3000
14	ESP32 boards	10	375	₹3750
15	Transistors BC547	30	5	₹150
16	Gas sensor	30	110	₹3300



Door Number : 15-7-336/17 , Reg.Office : # 205
Abhiman Plaza,Bunts Hostel Circle,Mangaluru
Pin Code-575 003, D.K District , Karnataka, India



M: +91 8892882988
M: +91 8951526765
Ph: 0824 - 2988298



Email: info@kakunjesoftware.com
Email: kakunjesoftware@gmail.com
Web: www.kakunjesoftware.com

CIN - U72200KA2015PTC083091

IEC - 0717505111

GSTIN - 29AAGCK0147D1ZS

17	Logic level shifters	10	35	₹350
18	Diodes 4007	30	1	₹30
19	IR Sensor	20	50	₹1000
20	F-F Jumper Wire (40 pcs set)	5	150	₹750
21	F-M Jumper Wire (40 pcs set)	5	150	₹750
22	16x2 LCD Display	30	185	₹5550
23	Resistor (220 Ohm)	30	1.5	₹45
	Grand Total			₹50,595.00/-

TERMS AND CONDITIONS

1. Advance Payment

A minimum of 50% advance payment must be made at the time of placing the order for processing to begin.

2. Delivery Timeline

- After receiving the advance, a **minimum of 15 days** is required to process and deliver the items.
- The item shall be delivered after the full payment is completed.

3. Warranty

No warranty is provided for any of the components supplied.

4. Quality Assurance

All components are thoroughly tested in our laboratory before dispatch.

Karunadu Technologies

#17, ATK complex, 2nd Floor, Acharya College Main Road, Beside Karur Vysya Bank, Chikkabanavara, Bengaluru Karnataka 560090

Phone: 09902913646/9964823646

E-Mail: mahesh@karunadutechnologies.com

PAN: BFRPD9191Q GSTIN: 29BFRPD9191Q1Z9



QUOTATION

QUOTATION: KT/2025/0122

DATE: 02/09/2025

BANK DETAILS

NAME: Karunadu Technologies

Karnataka bank

Current account number:

8432000100005701

IFSC code: KARB0000843

SL.NO	NAME OF THE EQUIPMENT	UNIT PRICE	QUANTITY	TOTAL
1	IoT Development Board (With All the Sensors) DTT22 Sensor LDR Sensor Soil Moisture Sensor Sound Sensor LCD Display Ultra-sonic sensor DC Motor Traffic Light Relay Module IR Sensor Wires	5000	30	1,50,000/-
TOTAL AMOUNT				1,50,000/-

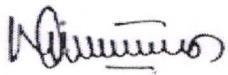
Total Rupees in words: One lakh Fifty Thousand rupees only

Terms and Conditions

1. This Quotation is valid for 15 days from date of issue.
2. Any damage to components/sensors after the demo will not be accounted for.
3. IOT development board should be used according to instructions provided.
4. And Damage to board due to power issues and wrong connections will not be covered under replacement.

5. Replacement of board will be provided if there is manufacturing defect within the 1 month of issue of board
6. Warranty: One Year against manufacturing defects.
7. Applicable GST @18% will be charged extra.
8. 100% payment will be made upon delivery

For Karunadu Technologies



Mahesh Deginall

If you have any questions concerning this invoice, contact: Mahesh Deginall at 09964823646