



## CSI COLLEGE OF ENGINEERING, KETTI

Approved by AICTE, New Delhi, (F.No.730-52-301 (E)ET/97 dated NOV.17,1997),  
Government of Tamil Nadu (vide GO Ms.No 112. Dated 23.3.1998)  
Affiliated to Anna University, Chennai(Tamil Nadu Act 26 of 2001 w.e.f. 31.12.2001).



**6.5.2 The institution reviews its teaching learning process, structures & methodologies of operations and learning outcomes at periodic intervals through IQAC set up as per norms and recorded the incremental improvement in various activities ( For first cycle - Incremental improvements made for the preceding five years with regard to quality For second and subsequent cycles – Incremental improvements made for the preceding five years with regard to quality and post accreditation quality initiatives )**

**Response:**

The IQAC conducts meetings at the start and end of each semester to provide faculty with guidelines aimed at enhancing teaching and learning. These guidelines help align instructional methods with desired outcomes, promoting an effective and productive learning environment.

**1. Experiential Learning:**

Practical learning bridges the gap between theory and real-world application for CSI students. Classroom learning is complemented by internships, co-ops, and project-based experiences, where students engage with the industry. Our well-planned course includes lectures, guest seminars, field visits, and lab sessions for blended learning. Students tackle challenges like limited budgets and tight deadlines, developing technical and soft skills. Internships with Gateway Software Solutions and Prolific Systems enhance their expertise, ensuring CSI graduates are confident and ready for the tech industry's demands.

**2. Digital Platform for Learning:**

Digital platforms promote collaborative learning through forums, group projects, and peer reviews, connecting students with the latest industry trends. Naan Mudulvan's adaptive learning ensures hands-on training each semester, helping students meet job recruiters' needs. Platforms like NPTEL, Microsoft Digital Skills, and CISCO certifications enhance technical expertise and employability. Certifications in Robotics Process Automation, Industry IoT, and CCNA validate students' skills, making them competitive in the job market while offering mentorship and career growth opportunities with higher salaries.



*R. Meey Shantri*

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## CSI COLLEGE OF ENGINEERING, KETTI The Nilgiris - 643215 LESSON PLAN



Faculty Name: J.JINCY			
Regulation	2021	Programme	B.Tech IT
Year	3	Semester	6
Course Name	EMBEDDED SYSTEMS AND IOT	Course Code	CS3691

UNIT	TOPIC	STARTING DATE	ENDING DATE	REFERENCE BOOKS /TEXTBOOK	TEACHING METHODOLOGY
I	8-Bit Microcontroller	13/8/24	13/8/24	T1- Pg.19-22	Black Board
	Architecture	14/8/24	14/8/24	T1- Pg. 23-26	PPT
	Instruction Set	16/8/24	16/8/24	T1- Pg. 29-65	Black Board
	Programming	16/8/24	16/8/24	T1- Pg. 29-65	SEMINAR
	Programming Parallel Ports	20/8/24	20/8/24	T1- Pg. 75-87	Black Board
	Timers	21/8/24	21/8/24	T1- Pg. 201-222	Group activity
	Serial Port	22/8/24	22/8/24	T1-Pg. 237-261	PPT
	Interrupt Handling	23/8/24	23/8/24	T1- Pg. 271-290	PPT
	Tutorial class	23/8/24	23/8/24	-	Open book test
II	Memory And I/O Devices Interfacing	27/8/24	27/8/24	R2- Pg. 166-169	NPTEL video
	Memory And I/O Devices Interfacing	28/8/24	28/8/24	R2- Pg. 169-175	NPTEL video
	Programming Embedded Systems in C	29/8/24	29/8/24	R2- Pg. 209-236	PPT
	Programming Embedded Systems in C	30/8/24	30/8/24	R2- Pg. 209-236	PPT
	Need For RTOS	31/8/24	31/8/24	R2- Pg. 293	PPT
	Multiple Tasks and Processes	3/9/24	3/9/24	R2- Pg. 294-306	Role play
	Context Switching	4/9/24	4/9/24	R2- Pg. 308-315	Role play
	Priority Based Scheduling Policies	5/9/24	5/9/24	R2- Pg. 316-323	Group activity
III	Priority Based Scheduling Policies	6/9/24	6/9/24	R2- Pg. 316-323	Group activity
	Introduction to the Concept of IoT Devices	9/9/24	9/9/24	R5-Pg.3-23	NPTEL VIDEO
	IoT Devices Versus Computers	10/9/24	10/9/24	R5-Pg.83-85	Black board
	IoT Configurations - Basic Components	11/9/24	11/9/24	R5-Pg.87-88	Black board
	Introduction to Arduino - Types of Arduino	12/9/24	12/9/24	R5-Pg.321	Practical session from NPTEL video
	Arduino Toolchain	13/9/24	13/9/24	R5-Pg.321	Practical session from NPTEL video



*R. Mayy Shanmugam*  
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	Arduino Programming Structure - Sketches	14/9/24	14/9/24	R5-Pg.322	Practical session from NPTEL videos
	Pins - Input/Output From Pins Using Sketches	17/9/24	17/9/24	R5-Pg.323	Practical session from NPTEL videos
	Introduction to Arduino Shields	18/9/24	18/9/24	R5-Pg.324	Seminar
	Integration of Sensors and Actuators with Arduino.	19/9/24	19/9/24	R5-Pg.329-339	Seminar
IV	IoT Communication Models and APIs	3/10/24	3/10/24	R5-Pg.130	PPT
	IoT Communication Protocols - Bluetooth - WiFi - ZigBee	4/10/24	4/10/24	R5-Pg.131	PPT
	GPS - GSM modules	5/10/24	5/10/24	R5-Pg.134	Seminar
	Open Platform (like Raspberry Pi) - Architecture	8/10/24	8/10/24	R5-Pg.340	Practical session from NPTEL videos
	Programming - Interfacing	9/10/24	9/10/24	R5-Pg.349	Practical session from NPTEL videos
	Accessing GPIO Pins	10/10/24	10/10/24	R5-Pg.343	Practical session from NPTEL videos
	Sending and Receiving Signals Using GPIO Pins	15/10/24	15/10/24	R5-Pg.345	Practical session from NPTEL videos
	Connecting to the Cloud	16/10/24	16/10/24	R5-Pg.246-249	PPT
V	Complete Design of Embedded Systems	17/10/24	17/10/24	R5-Pg.3-23	LCD Projector
	Development of IoT Applications	18/10/24	18/10/24	<a href="https://onlinecourses.nptel.ac.in/noc23_cs83/course">https://onlinecourses.nptel.ac.in/noc23_cs83/course</a>	LCD Projector
	Home Automation	19/10/24	19/10/24	<a href="https://onlinecourses.nptel.ac.in/noc23_cs83/course">https://onlinecourses.nptel.ac.in/noc23_cs83/course</a>	Seminar/Mini Project
	Smart Agriculture	22/10/24	23/10/24	R5- Pg. 271-281	Seminar/Mini Project
	Smart Cities	24/10/24	25/10/24	T2-Pg.385-400	Seminar/Mini Project
	Smart Healthcare	28/10/24	30/10/24	R5- Pg. 293-300	Seminar
	Practical Classes	31/10/24	10/11/24	Laboratory Exercises	
	CONTENT BEYOND THE SYLLABUS(Extra hour)	19/11/24	22/4/24		Model lab sessions and Practical study
	Revision for internal test 1	20/9/24	25/9/24		Unit 1,Unit 2,Unit 3-Group activity
	Revision for internal test 2	11/11/24	13/11/24		Unit 4,Unit 5-Group activity

### PRACTICAL EXERCISES:

1. Write 8051 Assembly Language experiments using simulator
2. Test data transfer between registers and memory.
3. Perform ALU operations.
4. Write Basic and arithmetic Programs Using Embedded C.



*R. Meey Shanthy*  
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5. Introduction to Arduino platform and programming
6. Explore different communication methods with IoT devices (Zigbee, GSM, Bluetooth)
7. Introduction to Raspberry PI platform and python programming
8. Interfacing sensors with Raspberry PI
9. Communicate between Arduino and Raspberry PI using any wireless medium
10. Setup a cloud platform to log the data
11. Log Data using Raspberry PI and upload to the cloud platform
12. Design an IOT based system

### COURSE OUTCOMES:

- CO1: Explain the architecture of embedded processors.  
 CO2: Write embedded C programs.  
 CO3: Design simple embedded applications.  
 CO4: Compare the communication models in IOT  
 CO5: Design IoT applications using Arduino/Raspberry Pi /open platform.

### TEXTBOOKS

1. Muhammed Ali Mazidi, Janice Gillispie Mazidi, Rolin D. McKinlay. "The 8051 Microcontroller and Embedded Systems", Pearson Education, Second Edition, 2014
2. Robert Barton, Patrick Grossetete, David Hanes, Jerome Henry, Gonzalo Salgueiro, "IoT Fundamentals: Networking Technologies, Protocols, and Use Cases for the Internet of Things", CISCO Press, 2017.

### REFERENCES

1. Michael J. Pont, "Embedded C", Pearson Education, 2007.
2. Wayne Wolf, "Computers as Components: Principles of Embedded Computer System Design", Elsevier, 2006.
3. Andrew N Sloss, D. Symes, C. Wright, "Arm System Developer's Guide", Morgan Kaufman/ Elsevier, 2006.
4. Arshdeep Bahga, Vijay Madisetti, "Internet of Things - A hands-on approach". Universities

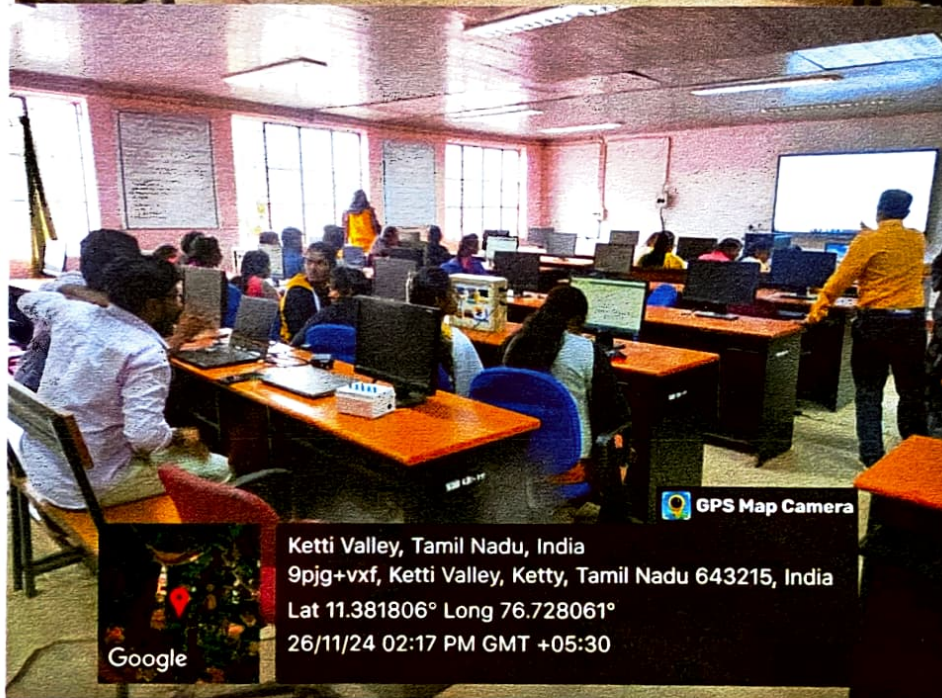
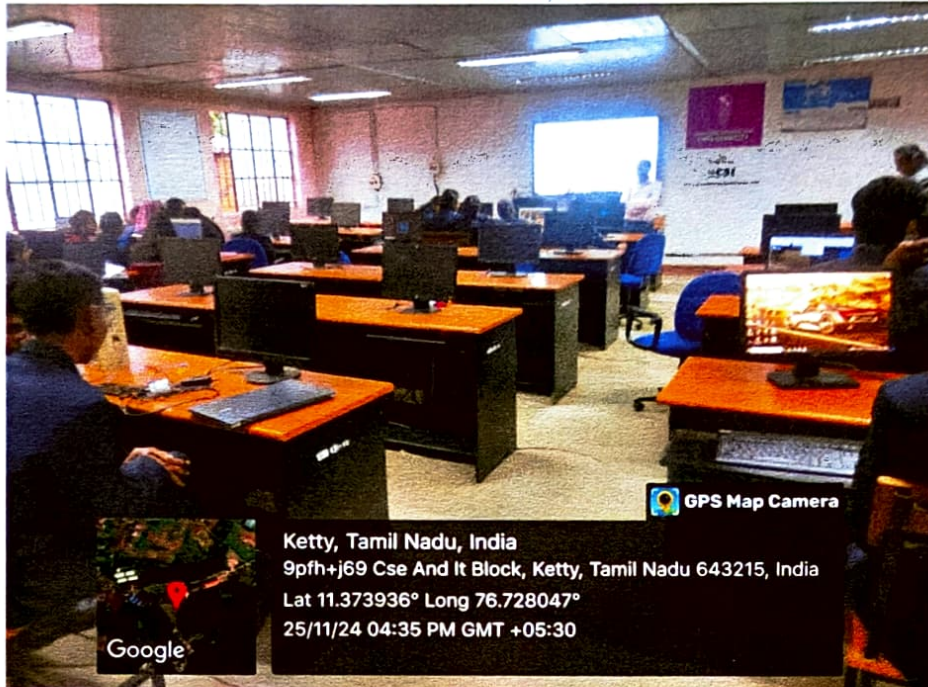
Prepared by		Approved by	
Name	Designation	HOD	Principal
J. Jincy	AP	<i>[Signature]</i>	<i>[Signature]</i>

DIRECTOR



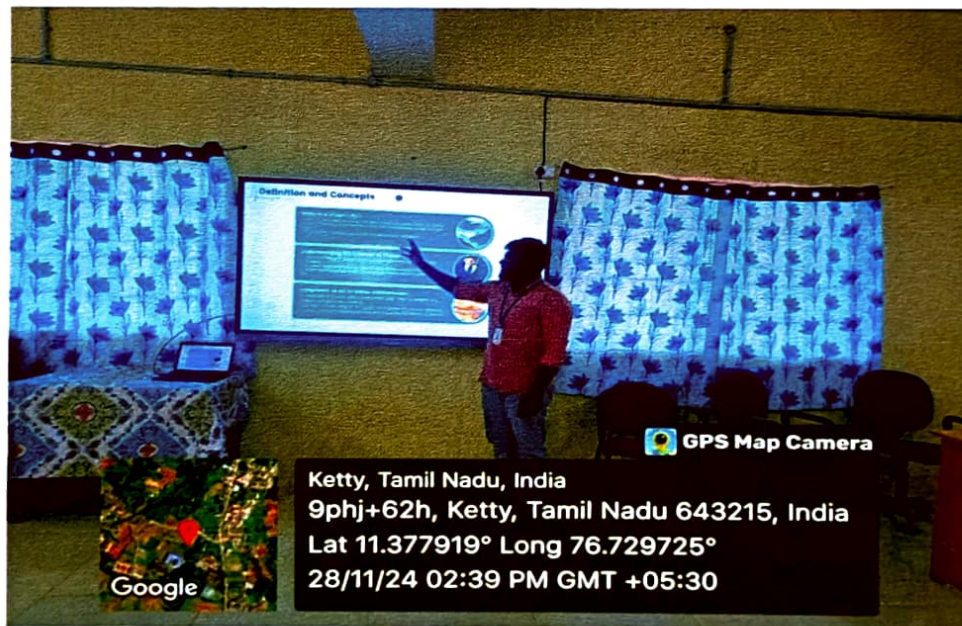
*R. Mey Shantra*  
PRINCIPAL  
CSI COLLEGE OF ENGINEERING  
KETTI - 643215

## PRACTICAL SESSIONS ON CS-3691-EMBEDDED SYSTEM AN IOT DESIGN BY MR.IMMANUEL SATISH,IOT EXPERT



*R. Meey Shantra*  
PRINCIPAL  
C.S.I. COLLEGE OF ENGINEERING  
KETTI-643 215.

## SEMINARS ON APPLICATIONS OF IOT USING ICT TOOLS:



*R. Mercy Shanthi*  
PRINCIPAL  
C.S.I. COLLEGE OF ENGINEERING  
KETTI-643 215.



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**Elite**

## NPTEL Online Certification

(Funded by the MoE, Govt. of India)



This certificate is awarded to

**SHARU MITHA**

for successfully completing the course

**Introduction to Internet of Things**



with a consolidated score of **78 %**

Online Assignments	25/25	Proctored Exam	52.5/75
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Total number of candidates certified in this course:32882

Jan-Apr 2024

(12 week course)

*Banerji*

Prof. Haimanti Banerji  
Coordinator, NPTEL  
IT Kharagpur



Indian Institute of Technology Kharagpur



Roll No: NPTEL24CS35S553800169

To verify the certificate



No. of credits recommended 3 or 4

**FINAL YEAR ECE STUDENT V.SHARUMITHA ATTENDED NPTEL COURSE  
DURING JAN –APR 2024**



*R. Mercy Shanmugam*

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**Elite**

## NPTEL Online Certification

(Funded by the MoE, Govt. of India)



This certificate is awarded to

**ADESH B**

for successfully completing the course

**Introduction to Internet of Things**

with a consolidated score of **70 %**

Online Assignments	25/25	Proctored Exam	45/75
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Total number of candidates certified in this course:32882

**Jan-Apr 2024**

(12 week course)

Prof. Haimanti Banerji  
Coordinator, NPTEL  
IT Kharagpur



Indian Institute of Technology Kharagpur



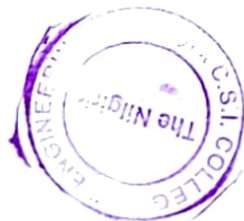
Roll No: NPTEL24CS35S553800052

To verify the certificate



No. of credits recommended: 3 or 4

**Final Year ECE Student Adesh.B Attended Nptel Course During Jan –Apr 2024**



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## CERTIFICATIONS WITH NAAN MUDULVAN :

	<p>This certificate is awarded to</p> <p><b>Sharu Mitha. V</b></p> <p>for successfully completing</p> <p><b>CCNA: Switching, Routing, and Wireless Essentials</b></p> <p>offered by Tamil Nadu Skill Development Corporation through the Cisco Networking Academy program.</p>
<p>Ram Gowtam Seelam Instructor Tamil Nadu Skill Development Corporation</p>	<p><b>08 Nov 2024</b> Completion Date</p>

CISO Certificate network associates-CCNA II Certification from Nann Mudulvan in the 7<sup>th</sup> semester




*R. Mercy Shanthi*  
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 Cisco Networking Academy

This certificate is awarded to

**Prediksha .D**

for successfully completing

**CCNA: Switching, Routing, and Wireless Essentials**

offered by Tamil Nadu Skill Development Corporation  
through the Cisco Networking Academy program.

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Ram Gowtam Seelam  
Instructor  
Tamil Nadu Skill Development Corporation

08 Nov 2024  
Completion Date

CISO Certificate network associates-CCNA II Certification from Nann Mudulvan in the  
7<sup>th</sup> semester



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**GATEWAY**  
SOFTWARE SOLUTIONS  
Software Development | Outsourcing  
ISO 9001:2015 Certified company

Delivery Partner of  
  
Hewlett Packard  
Enterprise

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This is to Certify that Mr/Ms. SHARUMITHA.V of VI YEAR ECE

CSI COLLEGE OF ENGINEERING, KETTI have successfully completed his/her

Workshop/In Plant Training / Internship on PYTHON WITH DATA SCIENCE

from 03.07.2023 to 24.07.2023 in our company located at Coimbatore.



*M.M*  
TECH LEAD

E-mail : [info@gatewaysoftwaresolutions.com](mailto:info@gatewaysoftwaresolutions.com) | Phone no : 0422 4950897 | [www.gatewaysoftwaresolutions.com](http://www.gatewaysoftwaresolutions.com)

VI ECE V. Sharmitha internship certificate at  
Gateway software solution



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INTERNSHIP CERTIFICATES

Certificate No : Shree/IC/20240715

## Certificate of Internship

This is to certify that **Ms. Sowmiya P K,**  
Third Year B.E in ECE @  
**CSI College of Engineering, Ketti**  
has successfully completed Internship on

- **Industrial Automation**
- **Embedded Systems**

at **Shree Technologies ,Coimbatore** from **15th July 2024 to 15th Aug 2024**  
We found her sincere ,hardworking and result oriented.  
She worked well as part of team during her tenure.

**SHREE TECHNOLOGIES**  
# 3/84, New Scheme Road, 1<sup>st</sup> Floor,  
Pappanacikenpalayam, Coimbatore-641037  
Visit us: [www.shreetechnologies.org](http://www.shreetechnologies.org)  
Contact us : +91 7598244427

Director



III year ECE student P.K Sowmiya  
internship certificate as a part of  
Experiential Learning.



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