VIDHYADEEP UNIVERSITY
Holy Flame of Knowledge

THIRD-YEAR DIPLOMA COMPUTER ENGINEERING SYLLABUS

Semester: 5TH

Course Code: 002204503 **Type of Course: PCC-14**

Course Name: INTERNET OF THING

Course Prerequisites: The purpose of this course is to help the student to attain the following industry identified competency through various teaching-learning experiences.

COURSE OBJECTIVE(S): The course focuses on significant components of the Internet of Things.

● The course covers the prototype and key components of networking for

development of applications based on the concept of Internet of Things.

● To design and implement IoT circuits and solutions.**TEACHING & EXAMINATION SCHEME:**

Teaching Scheme (Hrs/Week)				Examination Scheme					
Theory	Tutorial	Practical	Credit	SEE		CA			Total
				Th	Pr	MSE	PLE	LA	
3	0	0	4	60	00	20	20	00	100

Th: Theory; Pr: Practical; FA: Final Assessment; CAT: Continuous Assessment Theory; CAP: Continuous Assessment Practical;

*TOTAL Theory Hours: No. of Th. and Tut.Hrs/Week*15 = 45*

COURSE CONTENT(S):

Unit No.	Content	Hours	Weightage (%)
1	**Introduction to IoT** ● IoT Definition ● IoT Characteristics ● IoT Applications ● Key Components of IoT System :-Things/Device, Gateway, Cloud/Server, Analytics, User Interface ● Architecture of IoT :-Sensing Layer , Network Interface Layer, Data Processing Layer, Application Layer	08	15%
2	**Things in IoT and IoT Security & Privacy:** ● Voltage Considerations for Sensors	10	30%

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	• Sensors (working):- PIR Motion Sensor, Sharp IR Distance Sensor, LDR Sensor, Gyro Sensor, Ultrasonic Distance Sensor, DHT Sensor • Need of ADC Chip while using Analog Sensors • Actuators (working):- Servo Motor, Solenoid, Stepper Motor • Need of Relay while using Actuators		
3	**Programming with Arduino Uno** • ARDUINO UNO board Block diagram • Sketch Structure • Data types & Built in Constants • Operators: Arithmetic, Bitwise, Compound, Comparison, and Boolean • Control statements and Loops • Functions and library functions:- User defined functions, Library functions: I/O Functions, Char functions, Math Functions	10	30%
4	**IoT Protocols** • Messaging Protocols:-MQTT, CoAP, XMPP • Transport Protocols:- Introduction of BLE, Introduction to Li-Fi • Basics of Sensor Network Topologies:-Point to Point Topology, Mesh topology, Ring topology, Star Topology	10	15%
5	**Application of IoT:** • Overview, Block Diagram and Working of the following real world IoT applications • Smart Home automation • Agricultural System • Smart Parking	07	10%
	TOTAL	**45**	**100%**

Text Book(s):

Title of the Book	Author(s)	Publication
Internet Of Thing	Arsheep bahga	Atulprakashan

Reference Book(s):

Title of the Book	Author(s)	Publication
Internet Of Thing	Vasudevan	Wiley,india

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Iot Fundamental	Davidhence	Cisco press
Iot Based Project	Rajesh singh	bpb

Web Material Link(s):

a) https://boonsuen.com/process-scheduling-solver
b) http://cpuburst.com/ganttcharts.html
c) https://codepen.io/faso/pen/zqWGQW
d) https://www.tutorialspoint.com
e) www.w3schools.com
f) https://nptel.ac.in/courses/106106144
g) https://nptel.ac.in/courses/106105214
h) https://nptel.ac.in/courses/106102132

Equivalent/Corresponding Course on NPTEL (SWAYAM):

NPTEL course on
https://onlinecourses.swayam2.ac.in/ntr24_ed44/preview

COURSE EVALUATION:

Sr. No.	Activity	Marks	Weightage
1	Semester End Examination (External Th)	60	60%
2	Internal Examination	40	40%
2(a)	Mid Semester Examination	20	
2(b)	Attendance	10	
2(c)	Assessment Types (Any One from 2(c).1 to 2(c).7)	10	
2(c).1	Subject (Course) based Mini-Project		
2(c).2	Industry/Site Visit & Report		
2(c).3	Assignment		
2(c).4	Seminar		
2(c).5	Case Study		
2(c).6	Surprise Class Quiz		
2(c).7	Design Exercise		
2(c).7	Presentation		
2(d)	Practical (if Applicable)		

* For 4 Credit Subjects

1 Credit = 25 Marks
Theory: 3 Credits = 75 Marks
Practicals: 1 Credit = 25 Marks
SEE Evaluation will be of 100 marks and converted to 50 Marks (75 Th + 25 Pr)
CA Evaluation will be of 100 Marks and converted to 50 Marks. (75 Th + 25 Pr)

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Distribution of Marks for Theory Evaluation as per Bloom's Taxonomy Level:

Level	Remember	Understand	Apply	Analyse	Evaluate	Create
% Weightage	20%	10%	10%	15%	10%	20%

COURSE OUTCOMES:*(in the range of 4 to 6)*

CO1	Learn basic concepts of IoT.
CO2	Recognize different sensors.
CO3	Develop sketch for the IoT application using the Arduino Uno board.
CO4	Explain different IoT models.
CO5	Develop IoT applications using cloud services like thingspeak or firebase.