VIDHYADEEP UNIVERSITY
Holy Flame of Knowledge

THIRD-YEAR DIPLOMA COMPUTER ENGINEERING SYLLABUS

Semester: 6th

Course Code: 002298611 **Type of Course:** OEC-3

Course Name: Internet Of Things

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.

TEACHING & EXAMINATION SCHEME:

Teaching Scheme (Hrs/Week)				Examination Scheme					
Theory	Tutorial	Practical	Credit	SEE		CA			Total
				Th	Pr	MSE	PLE	LA	
3	0	0	3	60	00	40	00	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 (%)
Unit–I	**Introduction to Internet of Things** • Define the term "Internet of Things" • State the technological trends which have led to IoT. • Describe the impact of IoT on society.	09	15%
Unit – II	**Design consideration of IoT** • Enumerate and describe the components of an embedded system • Describe the interactions of embedded systems with the physical world. • Name the core hardware components most commonly used in IoT devices.	11	25%
Unit–III	**Interfacing by IoT devices** • Describe the interaction between software and hardware in an IoT device. • Explain the use of networking and basic networking hardware. • Describe the structure of the Internet	08	20%

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Unit–IV	**IoT Protocols** • Messaging Protocols:-MQTT, CoAP, XMPP • Basics of Sensor Network Topologies:-Point to Point Topology, Mesh topology, Ring topology, Star Topology	08	25%
Unit–V	**Application of IoT:** • Overview, Block Diagram and Working of the following real world IoT applications • Agricultural System • Smart Parking	09	15%
	Total	**45**	**100%**

Text Book(s):

Title of the Book	Author(s)	Publication
Internet Of Things		Atul Prakashan

Reference Book(s):

Title of the Book	Author(s)	Publication
Internet of Things	Raj Kamal	McGraw Hill Education; First edition (10 March 2017) ISBN 978-9352605224
internet of Things: A Hands-On Approach	Arsheep Bahge and Vijay Madisett	Orient Blackswan Private Limited - New Del hi; First edition (2015)

Web Material Link(s):

a) https://www.raspberrypi.org/blog/getting-started-with-iot
b) https://www.arduino.cc/en/IoT/HomePage
c) https://www.microchip.com/design-centers/internet-of-things
d) https://learn.adafruit.com/category/internet-of-things-iot
e) http://esp32.net

Equivalent/Corresponding Course on NPTEL (SWAYAM):

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

COURSE EVALUATION:

Sr. No.	Activity	Marks	Weightage

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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)

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

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

COURSE OUTCOMES:*(in the range of 1to 5)*

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 thing speak or firebase.