



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Technology and Science
Department of Electrical and Electronics Engineering
Choice Based Credit System (CBCS) in the Light of NEP-2020

COURSE CODE	CATE- GORY	COURSE NAME	TEACHING & EVALUATION SCHEME								
			THEORY			PRACTICAL		L	T	P	CREDITS
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
GPEE201	GE	IOT Applications for Automation	60	20	20	30	20	4	0	0	4

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit.

***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Educational Objectives (CEOs):

The objective of this course is to-

1. To Understand the Architectural Overview of IoT.
2. To Understand the IoT Reference Architecture and Real-World Design Constraints
3. To Understand the various IoT Protocols (Datalink, Network, Transport, Session, Service)

Course Outcomes (COs):

After completion of this course the students will be able -

1. To impart knowledge on IoT architecture and various protocols.
2. To implement IoT systems.

Syllabus

UNIT I

8 Hrs.

Overview: Overview of Internet of Things: Definition, IOT Vision, Smart Devices, IoT Conceptual Framework, IoT Architectural View, Components of IoT System, Examples of IoT system.

UNIT II

8 Hrs.

IOT Technologies: Basic building blocks, Design standards for IOT Systems, Wireless communication technologies: NFC, RFID, Bluetooth, ZigBee, WiFi. Wired Communication technologies: UART, SPI, I2C, Ethernet.

UNIT III

8 Hrs.

IOT Devices: Relays, Display, Switches, Actuators, Overview of various sensors such as Light, Temperature, Weight, Gas sensor, Ultra Sonic, Light (LDR, Photo Diode)

UNIT IV

8 Hrs.

Prototyping And Designing: Prototyping embedded device software: Arduino platform using IDE, Raspberry Pi IDE, Ethernet and WiFi Library. Software development for Gateways, Internet and web/cloud services.

UNIT V

8 Hrs.

IOT Case Studies: Home automation: Smart Lighting, Home intrusion detection. IOT System for Weather Monitoring System and Smart Cities.

Chairperson

Board of Studies
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Chairperson

Faculty of Studies
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Controller of Examination

Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Joint Registrar

Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Technology and Science
Department of Electrical and Electronics Engineering
Choice Based Credit System (CBCS) in the Light of NEP-2020

COURSE CODE	CATE-GORY	COURSE NAME	TEACHING &EVALUATION SCHEME								
			THEORY			PRACTICAL		L	T	P	CREDITS
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
GPEE201	GE	IOT Applications for Automation	60	20	20	30	20	4	0	0	4

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit.

***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Text Books:

1. Raj Kamal, “Internet of Things: Architecture and Design Principles”, McGraw Hill, First Edition, 2018.
2. Vijay Madisetti and Arshdeep Bahga, “Internet of Things (A Hands-on- Approach)”, 1st Edition, University Press, 2019.

References:

1. Jan Holler, Vlasios Tsiatsis, Catherine Mulligan, Stefan Avesand, Stamatis Karnouskos, David Boyle, “From Machine-to-Machine to the Internet of Things: Introduction to a New Age of Intelligence”, 1st Edition, Academic Press, 2014.
2. Peter Waher, “Learning Internet of Things”, PACKT publishing, BIRMINGHAM –MUMBAI
3. Bernd Scholz-Reiter, Florian Michahelles, “Architecting the Internet of Things”, ISBN 978-3-642 19156-5 e-ISBN 978-3-642-19157-2, Springer

Chairperson

Board of Studies
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Chairperson

Faculty of Studies
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Controller of Examination

Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Joint Registrar

Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore