GOVT. POLYTECHNIC, HAMIRPUR (H.P.)

Lesson Planning and Coverage

Branch: Information Technology **Semester: 4th**

Subject: Internet of Things **Session: Jan- July 2025**

Teacher: Pratibha Thakur **Laboratory: CC-1 lab**

Sr. No.	No of Lectures	Chapter/Unit Description	Detailed contents	Reference Resources	Remarks
1	10	Introduction to Internet of Things	Embedded Systems, M2M, Internet of Things (IoT), Characteristics of IoT, Advantages of IoT, IoT Enabling Technologies, : Smart Objects and Smart Environments, IoT Applications - Home Automation, Smart Cities, Smart Grids, IndustrialIoT,SmartFarming;IoTFramework, IoTChallenges	R1, R2,R3	
2	14	Physical&LogicalDesignofIoT	IoT Devices - Microcontroller Unit (MCU), Transducers, Actuators - Hydraulic, Pneumatic, Electrical, Thermal, Magnetic and Relay Actuators; Sensors - Location, Biometric, Acoustic, Environmental, Motion; Components of IoT - Things,Gateway, Cloud, Analytics, User Interface; Physical Design of IoT - Things in IoT, IoT Protocols; IoT Application Layer Protocols - AMQP, CoAP, MQTT, Logical Design ofIoT:IoTFunctionalBlocks,IoTLevelsandDeploymentTemplates.	R1, R2,R3	
3	12	IoTArchitectureandCommunicationTechnologies	oneM2M Architecture, IoT World Forum (IoTWF) Standardized Architecture, IoT Communication Technologies - ZigBee, BLE, Wifi, 802.15.4 , RFID, NFC; IoT Processing-On-siteandOff-siteProcessing,ProcessingOffloading;	R1, R2,R3	
4	12	IoTSupportingTechnologiesandApplications	Overview of Edge Computing, Fog Computing, and Cloud Computing, Study of IoT ApplicationsinAgriculture,Healthcare,Smart Homes,ConnectedVehicles	R1, R2,R3	
5	10	IoTImplementation	Arduino Boards, Arduino UNO - Features, Functional Blocks, Digital and Analog Pins; Arduino Sketch - setup() and loop() Functions, Serial Monitor; Raspberry Pi Features, Components, Comparison with Arduino, Raspberry Pi OS, IoT COTS Sensors,OverviewofAWSIoT	R1, R2,R3	

P.Thakur 27/01/25

Signature of Teacher with Date

Signature of HOD Gautam 27/01/2025

Reference Books & Online Resources

1. InternetofThings:AHands-onApproach,byA.Bahga,UniversitiesPress
2. InternetofThings:PrinciplesandParadigms,byRajkumarBuyya
3. InternetofThings:ArchitectureandDesignPrinciplesbyRajKamal,MGH

COURSE OUTCOMES:

After completing this course students will be able to:

CO-4.5.1	Understand the basic terminology associated with Android Programming.
CO-4.5.2	Explain various versions of android operating systems.
CO-4.5.3	To understand the android architecture and various tools available in android studio.
CO-4.5.4	To understand app development using Android studio.