



Lesson plan for –INTERNET OF THINGS
Academic Session 2025-26(W)
Department of Information Technology
UCP Engineering School, Berhampur

LESSON PLAN OF 2026-2027

(5th SEMESTER-IT)

DISCIPLINE:IT	SEMESTER:5TH	NAME OF THE TEACHING FACULTY:SARADASAHU
SUBJECT:IOT	NO.OF DAYS/PER WEEK	SEMESTER FROM DATE:14/07/2026 TO DATE:5/11/26
	CLASS ALLOTTED:3	NO.OF WEEKS:15
WEEK	CLASS DAY	THEORY/PRACTICAL TOPICS
1 st	1 st	Introduction to Internet of Things (IoT) - Overview of IoT - Definition and significance of IoT,
	2 nd	Historical evolution and future prospects,
	3 rd	Applications across various industries,
2 nd	1 st	IoT Architecture and Components, Basic architecture - sensors, actuators,
	2 nd	- sensors, actuators, connectivity, and data processing
	3 rd	- sensors, actuators, connectivity, and data processing
3 rd	1 st	, Hardware components: microcontrollers (e.g., Arduino, Raspberry Pi
	2 nd	Software components: operating systems and middleware
	3 rd	Sensors, Actuators, and Data Acquisition:
4 th	1 st	sensors and Actuators,
	2 nd	Types of sensors: temperature, humidity, motion, etc.
	3 rd	Types of sensors: temperature, humidity, motion, etc.
5 th	1 st	Actuators: motors, relays, and control mechanisms
	2 nd	Interfacing sensors and actuators with microcontrollers
	3 rd	Data Acquisition and Processing
6 ^h	1 st	Analog data acquisition methods
	2 nd	Digital data acquisition methods
	3 rd	Signal conditioning and filtering techniques, Introduction to data processing and storage.
7 th	1 st	Communication Protocols and Networking - IoT Communication Protocols,
	2 nd	Overview of protocols: MQTT,
	3 rd	MQTT, CoAP, HTTP, etc
8 th	1 st	Wireless communication:
	2 nd	Wi-Fi, Bluetooth,
	3 rd	Zigbee, Lora WAN

9 th	1 st	Wired communication: Ethernet, Serial communication
	2 nd	, Networking Fundamentals, IP addressing and subnetting
	3 rd	Network topologies and architectures,
10 th	1 st	Introduction to IPv6 and its relevance to IoT.
	2 nd	IoT Platforms and Cloud Integration - IoT Platforms,
	3 rd	Overview of popular IoT platforms (e.g., AWS IoT, Google Cloud IoT)
11 th	1 st	Data analytics and visualization tools,
	2 nd	Edge computing concepts,
	3 rd	Cloud Computing for IoT
12 th	1 st	Introduction to cloud services: IaaS, PaaS, SaaS
	2 nd	cloud services: IaaS, PaaS, SaaS
	3 rd	Integration of IoT devices with cloud platforms,
13 th	1 st	Data storage, processing
	2 nd	Data storage, processing, and management in cloud.
	3 rd	IoT Security and Privacy - Security Challenges in IoT,
14 th	1 st	Common vulnerabilities and threats
	2 nd	Authentication and authorization mechanisms,
	3 rd	Data encryption and secure communication
15 th	1 st	Privacy Considerations - Data privacy laws and regulations,
	2 nd	User consent and data ownership
	3 rd	Best Practices for ensuring privacy in IoT applications



Lesson Plan for TH2-Web Technologies
Academic Session 2026-27(W)
Department of Information Technology.
U.C.P. Engineering school, Berhampur

Discipline: IT	Semester: 5th	Name of the Faculty: Smt. Swagatika Malik, Lecturer Stage-I(IT)		
Subject: Web Technologies Code: TH2	No of Days/per week class allotted: 3 P/W	Semester from date: 1/07/2026 To Date: 5/11/2026 No of weeks: 15		
WEEK	PERIOD	TOPIC	Teaching Aids	Learning Outcome
1 st	1 st	Introduction to WWW: Overview of WWW	Chalk and Board	Explain WWW
	2 nd	Internet Protocols	Smart Board	Explain working of all internet protocols
	3 rd	Web Programs	Chalk and Board	Describe Web Programs
2 nd	1 st	Secure Connections	Smart Board	Explain Secure Connection
	2 nd	Web Browser	Smart Board	Describe browser
	3 rd	Web Server	Chalk and Board	Describe Web server architecture
3 rd	1 st	UNIX/Linux Web Server	Smart Board	Setting up UNIX/Linux Web Server
	2 nd	Dynamic IP	Chalk and Board	Explain Dynamic IP
	3 rd	Website Design Principles	Chalk and Board	Describe Web Design Principles
4 th	1 st	Client-Server (2-Tier) Architecture	PPT	Explain client-server architecture
	2 nd	Quiz Test		
	3 rd	Three-Tier Architecture	PPT	Explain client-server architecture
5 th	1 st	Three-Tier Architecture	PPT	Explain client-server architecture
	2 nd	Caches, Proxies	Smart Board	Explain scalability concepts: Case Studies
	3 rd	Indexes, Load Balancers-Queues	Smart Board	Explain scalability concepts: Case Studies
6 th	1 st	Web Application Architecture (WAA)	PPT	Describe WAA
	2 nd	Introduction to JavaScript	Chalk and Board	Explain JavaScript
	3 rd	JavaScript Variables	Chalk and Board	Explain JavaScript Variable
7 th	1 st	Operators, Functions	Chalk and Board	Develop JavaScript functions
	2 nd	1 st Monthly Test		

	3 rd	Conditions, Loops	Smart Board	Implement decision-making programs
8 th	1 st	Conditions, Loops	Smart Board	-do-
	2 nd	Practice & Assignment	Smart Board	Solve JavaScript problems
	3 rd	Advance Scripting: JavaScript and Objects	Smart Board	Smart Board
9 th	1 st	DOM and Web Browser Environments	PPT	Describe DOM Elements
	2 nd	Forms and Validations	Smart Board	Implement through Programs
	3 rd	DHTML: Combining HTML, CSS and JavaScript	Chalk and Board	Explain DHTML
10 th	1 st	1 st Internal Assessment		
	2 nd	Events, Buttons, Controlling your browser	Smart Board	Implement event handling
	3 rd	Ajax based Web Applications	Chalk and Board	Explain Ajax based web application
11 th	1 st	Alternatives of Ajax, XML, XSL and XSLT	Chalk and Board	-do-
	2 nd	Introduction to XML	Chalk and Board	
	3 rd	Uses of XML, Simple XML	Chalk and Board	Implement XML
12 th	1 st	XML Key Components	Chalk and Board	Describe its key components
	2 nd	DTD and Schemas	Smart Board	
	3 rd	XML with applications, XSL and XSLT	Smart Board	Explain asynchronous web communication
13 th	1 st	Introduction to Web Services PHP: Server-side scripting, Arrays, Function and Forms	PPT	Develop PHP scripts
	2 nd	2 nd Monthly Test		
	3 rd	Advance PHP Databases: Basic command with PHP examples	PPT	Handle forms using PHP
	4 th	Connection to server: Creating database, selecting a database, listing database	PPT	Connect PHP with MySQL
14 th	1 st	Listing table names, creating a table, inserting data, altering tables, queries	PPT	Manage databases
	2 nd	2nd Internal Assessment		
	3 rd	Deleting Database, deleting data and tables, PHP my admin and database bugs	PPT	Manage databases
15 th	1 st	Introduction to Modern Frameworks: React, Angular and NodeJS	Chalk and Board	Explain modern frameworks
	2 nd	Bootstrap, Tailwind CSS	Chalk and Board	Describe frontend/backend frameworks
	3 rd	2 nd Internal Assessment	Chalk and Board	
Extra Classes	1 st	Previous Year Question Discussion	Smart Board	
	2 nd	Doubt Clearing Class	Smart Board	



Lesson plan for TH-3(A) Programming with Java 2026-27 (W)

Department of Information Technology,

UCP Engineering School, Berhampur

DISCIPLINE:IT	SEMESTER:5th	NAME OF THE TEACHING FACULTY: BINOD KUMAR SABATA
SUBJECT: Programming with Java	NO.OF DAYS/PER WEEK	SEMESTER FROM DATE: 14/07/2026 TO DATE: 05/11/2026
	CLASS ALLOTTED: 3	NO.OF WEEKS:15
WEEK	CLASS DAY	THEORY/PRACTICAL TOPICS
1 st	1 st	Introduction to Java History and features of Java
	2 nd	Setting up the Java Development Kit (JDK) Understanding the Java Virtual Machine (JVM)
	3 rd	Basic Java syntax: data types, variables, operators, control flow statements (if-else, switch, loops)
2 nd	1 st	Input/Output operations (using Scanner and System.out)
	2 nd	Writing a Simple Program Compiling and executing
	3 rd	Create Packaged class
3 rd	1 st	Introduction To Object Oriented Programming
	2 nd	Basic concepts of OOPs: objects, classes, data encapsulation, inheritance, Polymorphism etc.
	3 rd	Fundamentals of Class & Object,
4 th	1 ST	New Keyword, reference variable, Members methods of a class,
	2 nd	Access modifiers: public, private, protected, default
	3 rd	Encapsulation: Hiding data through access modifiers.
5 th	1 st	Access Control Static Methods, Static Variables, Static Block
	2 nd	Constructor, Overloading methods, Overloading constructors
	3 rd	Using of final keyword, Finalize method
6 ^h	1 st	Inheritance , Basics of Inheritance, members accessibility in inheritance
	2 nd	Types of inheritance: Single, multilevel, hierarchical.
	3 rd	Super keyword, Method overriding.
7 th	1 st	Final keyword (for classes, methods, and variables).
	2 nd	Dynamic Method Dispatch, Abstract class, Preventing Overriding, Preventing Inheritance
	3 rd	Interfaces: Defining and implementing interfaces
8 th	1 st	Interfaces , Purpose of interface
	2 nd	Defining an interface
	3 rd	implementing interfaces
9 th	1 st	Interface reference variables
	2 nd	Interface with variables , Extending interfaces
	3 rd	Arrays and Strings, Arrays declaring and initializing arrays
10 th	1 st	Multidimensional arrays
	2 nd	String manipulation

	3 rd	creating strings, string methods (length, concat, substring, etc.)
11 th	1 st	Wrapper classes
	2 nd	Integer, Float, Double, etc.
	3 rd	Exception Handling and File Handling
12 th	1 st	Exceptions: types of exceptions,
	2 nd	try-catch blocks, finally block
	3 rd	Throwing exceptions Custom exceptions
13 th	1 st	File input/output: reading from and writing to files
	2 nd	Using File Input Stream, File Output Stream,
	3 rd	Buffered Reader, Buffered Writer
14 th	1 st	Multithreaded programming Basics of threads
	2 nd	Java threaded model,
	3 rd	defining threads using Runnable interface
15 th	1 st	defining threads using Thread superclass,
	2 nd	Multiple threads, Thread Priority values,
	3 rd	Thread Synchronization Using synchronized blocks



Lesson plan for TH-4(B) CYBER SECURITY 2026-27 (W)

Department of Information Technology,
UCP Engineering School, Berhampur

DISCIPLINE:IT	SEMESTER:5th	NAME OF THE TEACHING FACULTY: BINOD KUMAR SABATA
SUBJECT: CYBER SECURITY	NO.OF DAYS/PER WEEK	SEMESTER FROM DATE: 14/07/2026 TO DATE: 05/11/2026
	CLASS ALLOTTED: 3	NO.OF WEEKS:15
WEEK	CLASS DAY	THEORY/PRACTICAL TOPICS
1 st	1 st	Introduction to Cyber Security
	2 nd	Introduction to Cyber world,
	3 rd	Basics of Information Security
2 nd	1 st	Basics of Information Security
	2 nd	Cryptography and cryptographic algorithm
	3 rd	Cryptography and cryptographic algorithm
3 rd	1 st	Cryptography and cryptographic algorithm
	2 nd	Symmetric Key Cryptography
	3 rd	Asymmetric Key Cryptography
4 th	1 ST	Steganography
	2 nd	Network Security
	3 rd	Principles of Security,
5 th	1 st	Network Security Model
	2 nd	Security of Network Infrastructure, Network zones and zone management,
	3 rd	Firewalls and UTM,
6 ^h	1 st	Intrusion Detection System (IDS),
	2 nd	Intrusion Prevention System (IPS),
	3 rd	Security measures in Data Centres
7 th	1 st	Security measures in Data Centres
	2 nd	Identity and Access Management
	3 rd	Cyber Security Standard
8 th	1 st	CIA Triad of Information Security
	2 nd	Assets, Vulnerabilities
	3 rd	Threats Risk Identification
9 th	1 st	Risk Assessment and Risk Mitigatio
	2 nd	Risk Assessment and Risk Mitigatio
	3 rd	ISO 27001:2013
10 th	1 st	ISO 27001:2013
	2 nd	Cyber Security Policy

	3 rd	Perimeter and Internal Security
11 th	1 st	Cyber Security Policy Development
	2 nd	Introduction to Regulatory
	3 rd	PolicyFramework for Cyber Security
12 th	1 st	Introduction to ITACT 2000 and ITACT 2008
	2 nd	Introduction to ITACT 2000 and ITACT 2008
	3 rd	Mobile and Mobile Security
13 th	1 st	Basics of Mobile Device
	2 nd	SOC, SIM and SIM security
	3 rd	Android and IOS Operating System
14 th	1 st	SIM Fraud – SIM swap
	2 nd	OTP fraud
	3 rd	Security of Mobile Applications
15 th	1 st	Cloud and Cloud Security
	2 nd	Basics of Cloud Computing Environment
	3 rd	Cloud security