LESSON PLAN – 2023 - 2024

DISCIPLINE: IT	SEMESTER: 6th	NAME OF THE TEACHING FACULTY: SUJATA KUMARI ACHARYA
SUBJECT: CNS	NO.OF DAYS/PER WEEK CLASS ALLOTTED:4	SEMESTER FROM DATE: 16/01/24 TO DATE: 01/05/2024 NO.OF WEEKS: 15
WEEK	CLASS DAY	THEORY/PRACTICAL TOPICS
1ST	1ST	**Possible attacks on computers**
	2ND	The need for security
	3RD	Security approach
	4TH	Principles of security
2ND	1ST	Types of attacks
	2ND	**Cryptography concepts**
	3RD	**Cryptography concepts**
	4TH	Plain text
3RD	1ST	Cipher Text
	2ND	Substitution techniques
	3RD	Transposition techniques
	4TH	Encryption techniques
4TH	1ST	Decryption techniques
	2ND	Symmetric key cryptography
	3RD	Asymmetric key cryptography
	4TH	**Symmetric key algorithms**
5TH	1ST	Symmetric key algorithm types
	2ND	Symmetric key algorithm types
	3RD	**Asymmetric key algorithms**
	4TH	Asymmetric key algorithm types
6TH	1ST	Overview of Symmetric key cryptography
	2ND	Overview of Symmetric key cryptography
	3RD	Data encryption standards
	4TH	Data encryption standards
7TH	1ST	Over view of Asymmetric key cryptography
	2ND	The RSA algorithm
	3RD	The RSA algorithm
	4TH	Symmetric key cryptography
8TH	1ST	Asymmetric key cryptography
	2ND	Digital signature
	3RD	**Digital certificate**
	4TH	Digital certificates
9TH	1ST	**Public key infrastructure**
	2ND	Private key management
	3RD	Private key management
	4TH	PKIX Model
10TH	1ST	PKIX Model
	2ND	Public key cryptography standards
	3RD	Public key cryptography standards
	4TH	Public key cryptography standards

11TH	1ST	**Internet security protocols**
	2ND	Basic concept
	3RD	Secure socket layer
	4TH	Transport layer security
12TH	1ST	Transport layer security
	2ND	Secure Hyper text transfer protocol(SHTTP)
	3RD	Secure Hyper text transfer protocol(SHTTP)
	4TH	Time stamping protocol (TSP)
13TH	1ST	Secure electronic transaction (SET)
	2ND	**User authentication**
	3RD	Authentication basics
	4TH	Password
14TH	1ST	Authentication Tokens
	2ND	Certificate based authentication
	3RD	Biometric authentication
	4TH	**Network Security & VPN**
15TH	1ST	Brief introduction of TCP/IP
	2ND	Firewall
	3RD	IP Security
	4TH	Virtual Private Network (VPN)

DISCIPLINE: IT	**SEMESTER: 6th**	**NAME OF THE TEACHING FACULTY: SMT NAYANA PATEL**
SUBJECT: IOT	**NO.OF DAYS/PER WEEK CLASS ALLOTTED:4**	**SEMESTER FROM DATE:16/01/24 TO DATE: 01/05/2024 NO.OF WEEKS:15**
WEEK	**CLASS DAY**	**THEORY TOPICS**
1ST	1ST	Introduction to Internet of Things. Introduction.Characteristics of IoT . Applications of Io
	2ND	IoT Categories IoT Enablers and connectivity layers
	3RD	Baseline Technologies Sensor
	4TH	Actuator
2ND	1ST	IoT components and implementation
	2ND	Challenges for IoT
	3RD	IOT Networking . Terminologies.
	4TH	Gateway Prefix allotment
3RD	1ST	Impact of mobility on Addressing
	2ND	Multihoming
	3RD	Deviation from regular Web 2.6
	4TH	IoT identification and Data protocols
4TH	1ST	Connectivity Technologies . Introduction.
	2ND	IEEE 802.15.4
	3RD	IEEE 802.15.4
	4TH	ZigBee, 6LoWPAN
5TH	1ST	RFID, HART and wireless HART

	2ND	NFC, Bluetooth, Z wave, ISA100.11.A
	3RD	Introduction. Components of a sensor node .Modes of Detection
	4TH	Challenges in WSN .Sensor Web .Cooperation and Behaviour of Nodes in WSN
6TH	1ST	Self Management of WSN .Social sensing WSN
	2ND	Application of WSN .Wireless Multimedia sensor network
	3RD	Wireless Nanosensor Networks. Underwater acoustic sensor networks.
	4TH	WSN Coverage .Stationary WSN, Mobile WSN.
7TH	1ST	M2M communication
	2ND	M2M communication
	3RD	M2M Ecosystem
	4TH	M2M Ecosystem
8TH	1ST	M2M service Platform
	2ND	Interoperability
	3RD	Programming with Arduino .Features of Arduino
	4TH	Components of Arduino Board.
9TH	1ST	Arduino IDE
	2ND	Case Studies
	3RD	Case Studies
	4TH	Programming with Raspberry Pi
10TH	1ST	Architecture and Pin Configuration
	2ND	Case studies
	3RD	Implementation of IoT with Raspberry Pi
	4TH	Implementation of IoT with Raspberry Pi
11TH	1ST	Software defined Networking .Limitation of current network
	2ND	Origin of SDN . SDN Architecture
	3RD	Rule Placement, Open flow Protocol
	4TH	Controller placement
12TH	1ST	Security in SDN
	2ND	Integrating SDN in IoT
	3RD	Smart Homes. Origin and example of Smart Home Technologies
	4TH	Smart Home Implementation
13TH	1ST	Home Area Networks(HAN)
	2ND	Home Area Networks(HAN)
	3RD	Smart Home benefits and issues
	4TH	Smart Cities.Characteristics of Smart Cities . Smart city Frameworks
14TH	1ST	Challenges in Smart cities
	2ND	Data Fusion
	3RD	Smart Parking
	4TH	Energy Management in Smart cities

15TH	1ST	Industrial IoT. IIoT requirements
	2ND	Design considerations
	3RD	Applications of IIoT .Benefits of IIoT .
	4TH	Challenges of IIoT

DISCIPLINE : IT	SEMESTER:6th	NAME OF THE TEACHING FACULTY: SMT SUMITRA MAHAPATRA
SUBJECT:CC	NO.OF DAYS/PER WEEK CLASS ALLOTTED:4	SEMESTER FROM DATE: 16/01/24 TO DATE: 01/05/2024 NO.OF WEEKS:15
WEEK	**CLASS DAY**	**THEORY/PRACTICAL TOPICS**
1st	1st	1.1. Historical development 1.2. Vision of Cloud Computing
	2nd	1.3. Characteristics of Cloud computing 1.4. Cloud computing Reference model
	3rd	1.5. Cloud computing environment 1.6. Cloud Service requirements
	4th	1.7. Cloud and Dynamic Infrastructure 1.8. Cloud Adoption
2nd	1st	1.9. Cloud applications
	2nd	2.1. Introduction 2.2. Cloud Reference Model
	3rd	2.1. Introduction 2.2. Cloud Reference Model
	4th	2.3. Types of Clouds
3rd	1st	2.3. Types of Clouds
	2nd	2.4. Cloud Interoperability and standards
	3rd	2.4. Cloud Interoperability and standards
	4th	2.5. Cloud computing Interoperability use cases
4th	1st	2.6. Role of standards in Cloud Computing environment
	2nd	3.1. Introduction 3.2. Scalability and Fault Tolerance
	3rd	3.1. Introduction 3.2. Scalability and Fault Tolerance

	4th	3.3. Cloud solutions 3.4. Cloud Ecosystem
5th	1st	3.5. Cloud Business process management 3.6. Portability and Interoperability
	2nd	3.7. Cloud Service management 3.8. Cloud Offerings
	3rd	3.9. Testing under Control 3.10. Cloud service Controls
	4th	3.11. Virtual desktop Infrastructure
6h	1st	3.11. Virtual desktop Infrastructure
	2nd	4.1. Create a virtualised Architecture 4.2. Data Centre
	3rd	4.3. Resilience 4.4. Agility
	4th	4.5. Cisco Data Centre Network architecture
7th	1st	4.6. Storage 4.7. Provisioning
	2nd	4.8. Asset Management 4.9. Concept of Map Reduce
	3rd	4.9. Concept of Map Reduce
	4th	4.10. Cloud Goverance 4.11. Load Balancing
8th	1st	4.12. High Availability 4.13. Disaster Recovery
	2nd	5.1. Virtualisation 5.2. Betwork Virtualisation
	3rd	5.3. Desktop and Application Virtualisation
	4th	5.4. Desktop as a service
9th	1st	5.5. Local desktop Virtualisation 5.6. Virtualisation benefits
	2nd	5.7. Server Virtualisation

	3rd	5.8. Block and File level Storage Virtualisation
	4th	5.9. Virtual Machine Monitor 5.10. Infrastructure Requirements
10th	1st	5.11. VLAN and VSAN
	2nd	6.1. Cloud Security Fundamentals
	3rd	6.2. Cloud security services
	4th	6.2. Cloud security services
11th	1st	6.3. Design Principles
	2nd	6.3. Design Principles
	3rd	6.4. Secure Cloud software requirements
	4th	6.5. Policy Implementation
12th	1st	6.6. Cloud Computing Security Challenges
	2nd	7.1. Architectural Considerations 7.2. Information Classification
	3rd	7.3. Virtual Private Networks 7.4. Public Key and Encryption Key management
	4th	7.5. Digital certificates 7.6. Key management 7.7. Memory Cards
13th	1st	7.6. Key management 7.7. Memory Cards
	2nd	7.8. Implementing Identity Management 7.9. Controls and Autonomic System
	3rd	8.1. Cloud Information security vendors
	4th	8.2. Cloud Federation, charactrization
14th	1st	8.3. Cloud Federation stack
	2nd	8.4. Third Party Cloud service
	3rd	8.5. Case study
	4th	9.1. Introduction

15th	1st	9.2. Data Source
	2nd	9.2. Data Source
	3rd	9.3. Data storage and Analysis
	4th	9.4. Comparison with other system

DISCIPLINE : IT	**SEMESTER: 6th**	**NAME OF THE TEACHING FACULTY: DENESH KUMAR GAUDA**
SUBJECT: ST	**NO.OF DAYS/PER WEEK CLASS ALLOTTED:4**	**SEMESTER FROM DATE: 16/01/24 TO DATE: 01/05/2024 NO.OF WEEKS:15**
WEEK	CLASS DAY	THEORY/PRACTICAL TOPICS
1ST	1ST	Introduction, Testing Process
	2ND	What is s/w Testing, Purpose of testing
	3RD	who should test,what to test
	4TH	selection of good test case, Measurement of progress
2ND	1ST	Incremental testing approach
	2ND	Basic terminology,Testing Life cycle
	3RD	when to stop testing, Principle of testing
	4TH	Limitation of testing, Availability of testingtool, techniques, metrics
3RD	1ST	Introduction,Verification and Validation
	2ND	QA and QC, V&V Limitations
	3RD	Categorising V&V techniques, Role of V&V in SDLC
	4TH	Proof of correctness, Simulation & Prototyping, Requirement Tracing, s/w v&v planning
4TH	1ST	s/w testing review, Independent v&v contractor
	2ND	positive &negative effect of v&v on projects, Standard for s/w test documentation
	3RD	Introduction, BVA
	4TH	BVA
5TH	1ST	Equivalence class testing
	2ND	Equivalence class testing
	3RD	Dicision Table based testing
	4TH	Dicision Table based testing
6TH	1ST	Cause effect graphing technique
	2ND	Cause effect graphing technique
	3RD	Comparision of techniques
	4TH	Comparision of techniques

7TH	1ST	Introduction, static vs. dynamic testing
	2ND	Static vs. dynamic testing
	3RD	Static vs. dynamic testing
	4TH	Static vs. dynamic testing
8TH	1ST	Dynamic WB testing techniques
	2ND	Dynamic WB testing techniques
	3RD	Mutation Testing vs. error seeding
	4TH	Mutation Testing vs. error seeding
9TH	1ST	Comparision of BB and WB testing techniques
	2ND	Comparison of WB testing techniques, advantages
	3RD	Introduction, What is Gray Box Testing
	4TH	What is Gray Box Testing
10TH	1ST	Difinitions of Gray Box Testing
	2ND	Difinitions of Gray Box Testing
	3RD	Comparision of WB, BB, GB
	4TH	Comparision of WB, BB, GB
11TH	1ST	Prioritization Guidelines
	2ND	Priority Category Schemes
	3RD	Risk Analysis
	4TH	Regression Testing
12TH	1ST	Prioritization of test cases for regression Testing
	2ND	Regression Testing Techniques
	3RD	Introduction, Unit, Integration, System, acceptance testing
	4TH	Integration Tesing, classification,decomposition
13TH	1ST	Call graph, path based integration
	2ND	Call graph, path based integration
	3RD	System Testing
	4TH	System Testing
14TH	1ST	Automated testing,Considerations during testing
	2ND	Types of Testing Tools- static vs Dynamic, problems with manual Testing
	3RD	Benefits of Automated Testing, Disadvantages of Automated testing
	4TH	Skill needed for using automated tools
15TH	1ST	Test Automation
	2ND	Debugging
	3RD	Criteria for for selection of test tools
	4TH	steps for tool selection

LESSON PLAN – 2023 - 2024

DISCIPLINE: IT	SEMESTER:6th	NAME OF THE TEACHING FACULTY: SMT

		REETANJALI PANDA & SUJATA KUMARI ACHARYA
SUBJECT: NS LAB	NO.OF DAYS/PER WEEK CLASS ALLOTTED:4	SEMESTER FROM DATE: 16/01/24 TO DATE: 01/05/2024 NO.OF WEEKS:15
WEEK	CLASS DAY	THEORY/PRACTICAL TOPICS
1st	1st	1. Installation and comparison of various anti virus software
	2nd	1. Installation and comparison of various anti virus software
	3rd	1. Installation and comparison of various anti virus software
	4th	1. Installation and comparison of various anti virus software
2nd	1st	1. Installation and comparison of various anti virus software
	2nd	1. Installation and comparison of various anti virus software
	3rd	1. Installation and comparison of various anti virus software
	4th	1. Installation and comparison of various anti virus software
3rd	1st	2. Installation and study of various parameters of firewall.
	2nd	2. Installation and study of various parameters of firewall.
	3rd	2. Installation and study of various parameters of firewall.
	4th	2. Installation and study of various parameters of firewall.
4th	1st	2. Installation and study of various parameters of firewall.
	2nd	2. Installation and study of various parameters of firewall.
	3rd	2. Installation and study of various parameters of firewall.
	4th	2. Installation and study of various parameters of firewall.

5th	1st	3. Writing program in C to Encrypt/Decrypt using XOR key.

	2nd	3. Writing program in C to Encrypt/Decrypt using XOR key.
	3rd	3. Writing program in C to Encrypt/Decrypt using XOR key.
	4th	3. Writing program in C to Encrypt/Decrypt using XOR key.
6h	1st	3. Writing program in C to Encrypt/Decrypt using XOR key.
	2nd	3. Writing program in C to Encrypt/Decrypt using XOR key.
	3rd	3. Writing program in C to Encrypt/Decrypt using XOR key.
	4th	3. Writing program in C to Encrypt/Decrypt using XOR key.
7th	1st	3. Writing program in C to Encrypt/Decrypt using XOR key.
	2nd	3. Writing program in C to Encrypt/Decrypt using XOR key.
	3rd	3. Writing program in C to Encrypt/Decrypt using XOR key.
	4th	3. Writing program in C to Encrypt/Decrypt using XOR key.
8th	1st	4. Study of VPN.
	2nd	4. Study of VPN.
	3rd	4. Study of VPN.
	4th	4. Study of VPN.
9th	1st	4. Study of VPN.
	2nd	4. Study of VPN.
	3rd	4. Study of VPN.
	4th	4. Study of VPN.
10th	1st	4. Study of VPN.
	2nd	5. Study of various hacking tools.
	3rd	5. Study of various hacking tools.

	4th	5. Study of various hacking tools.
11th	1st	5. Study of various hacking tools.

	2nd	5. Study of various hacking tools.
	3rd	5. Study of various hacking tools.
	4th	5. Study of various hacking tools.
12th	1st	5. Study of various hacking tools.
	2nd	5. Study of various hacking tools.
	3rd	5. Study of various hacking tools.
	4th	5. Study of various hacking tools.
13th	1st	5. Study of various hacking tools.
	2nd	5. Study of various hacking tools.
	3rd	6. Practical applications of digital signature
	4th	6. Practical applications of digital signature
14th	1st	6. Practical applications of digital signature
	2nd	6. Practical applications of digital signature
	3rd	6. Practical applications of digital signature
	4th	6. Practical applications of digital signature
15th	1st	6. Practical applications of digital signature
	2nd	6. Practical applications of digital signature
	3rd	6. Practical applications of digital signature
	4th	6. Practical applications of digital signature
DISCIPLINE: IT	**SEMESTER: 6th**	**NAME OF THE TEACHING FACULTY: SMT SUMITRA MAHAPATRA & NAYANA PATEL**

SUBJECT:IOT LAB	NO.OF DAYS/PER WEEK CLASS ALLOTTED:4	SEMESTER FROM DATE: 16/01/24 TO DATE: 01/05/2024 NO.OF WEEKS:15
WEEK	CLASS DAY	THEORY/PRACTICAL TOPICS

WEEK	CLASS DAY	THEORY/PRACTICAL TOPICS
1st	1st	Basics of C language using Arduino IDE Understating basics of Arduino IDE
	2nd	Basics of C language using Arduino IDE Understating basics of Arduino IDE
	3rd	• Variables, datatype, loops, control statement, function
	4th	• Variables, datatype, loops, control statement, function
2nd	1st	• Variables, datatype, loops, control statement, function
	2nd	• Variables, datatype, loops, control statement, function
	3rd	• Variables, datatype, loops, control statement, function
	4th	• Variables, datatype, loops, control statement, function
3rd	1st	• Variables, datatype, loops, control statement, function
	2nd	• Variables, datatype, loops, control statement, function
	3rd	Practical using Arduino-interfacing sensors Interfacing Light Emitting Diode(LED)- Blinking LED
	4th	Practical using Arduino-interfacing sensors Interfacing Light Emitting Diode(LED)- Blinking LED
4th	1st	Practical using Arduino-interfacing sensors Interfacing Light Emitting Diode(LED)- Blinking LED
	2nd	Practical using Arduino-interfacing sensors Interfacing Light Emitting Diode(LED)- Blinking LED
	3rd	Practical using Arduino-interfacing sensors Interfacing Light Emitting Diode(LED)- Blinking LED

	4th	Practical using Arduino-interfacing sensors Interfacing Light Emitting Diode(LED)- Blinking LED
5th	1st	• Interfacing Button and LED – LED blinking when button is pressed
	2nd	• Interfacing Button and LED – LED blinking when button is pressed

	3rd	• Interfacing Button and LED – LED blinking when button is pressed
	4th	• Interfacing Button and LED – LED blinking when button is pressed
6h	1st	• Interfacing Button and LED – LED blinking when button is pressed
	2nd	• Interfacing Button and LED – LED blinking when button is pressed
	3rd	• Interfacing Light Dependent Resistor (LDR) and LED, displaying automatic
	4th	• Interfacing Light Dependent Resistor (LDR) and LED, displaying automatic
7th	1st	• Interfacing Light Dependent Resistor (LDR) and LED, displaying automatic
	2nd	• Interfacing Light Dependent Resistor (LDR) and LED, displaying automatic
	3rd	• Interfacing Light Dependent Resistor (LDR) and LED, displaying automatic
	4th	• Interfacing Light Dependent Resistor (LDR) and LED, displaying automatic
8th	1st	• Night lamp Interfacing Temperature Sensor(LM35) and/or humidity sensor (e.g.DHT11
	2nd	• Night lamp Interfacing Temperature Sensor(LM35) and/or humidity sensor (e.g.DHT11
	3rd	• Night lamp Interfacing Temperature Sensor(LM35) and/or humidity sensor (e.g.DHT11

	4th	• Night lamp Interfacing Temperature Sensor(LM35) and/or humidity sensor (e.g.DHT11
9th	1st	• Night lamp Interfacing Temperature Sensor(LM35) and/or humidity sensor (e.g.DHT11
	2nd	• Night lamp Interfacing Temperature Sensor(LM35) and/or humidity sensor

		(e.g.DHT11
	3rd	• Interfacing Liquid Crystal Display(LCD) – display data generated by sensor
	4th	• Interfacing Liquid Crystal Display(LCD) – display data generated by sensor
10th	1st	• Interfacing Liquid Crystal Display(LCD) – display data generated by sensor
	2nd	• Interfacing Liquid Crystal Display(LCD) – display data generated by sensor
	3rd	• Interfacing Liquid Crystal Display(LCD) – display data generated by sensor
	4th	• Interfacing Liquid Crystal Display(LCD) – display data generated by sensor
11th	1st	• On LCD Interfacing Air Quality Sensor-pollution (e.g. MQ135) – display data on LCD
	2nd	• On LCD Interfacing Air Quality Sensor-pollution (e.g. MQ135) – display data on LCD
	3rd	• On LCD Interfacing Air Quality Sensor-pollution (e.g. MQ135) – display data on LCD
	4th	• On LCD Interfacing Air Quality Sensor-pollution (e.g. MQ135) – display data on LCD
12th	1st	• On LCD Interfacing Air Quality Sensor-pollution (e.g. MQ135) – display data on LCD

	2nd	• On LCD Interfacing Air Quality Sensor-pollution (e.g. MQ135) – display data on LCD
	3rd	,• Switch on LED when data sensed is higher than specified value. Interfacing Bluetooth module (e.g. HC05)- receiving data from mobile phone
	4th	,• Switch on LED when data sensed is higher than specified value. Interfacing Bluetooth module (e.g. HC05)- receiving data from mobile phone
13th	1st	,• Switch on LED when data sensed is

		higher than specified value. Interfacing Bluetooth module (e.g. HC05)- receiving data from mobile phone
	2nd	,• Switch on LED when data sensed is higher than specified value. Interfacing Bluetooth module (e.g. HC05)- receiving data from mobile phone
	3rd	,• Switch on LED when data sensed is higher than specified value. Interfacing Bluetooth module (e.g. HC05)- receiving data from mobile phone
	4th	,• Switch on LED when data sensed is higher than specified value. Interfacing Bluetooth module (e.g. HC05)- receiving data from mobile phone
14th	1st	,• Switch on LED when data sensed is higher than specified value. Interfacing Bluetooth module (e.g. HC05)- receiving data from mobile phone
	2nd	• On Arduino and display on LCD Interfacing Relay module to demonstrate Bluetooth based home automation• application. (using Bluetooth and relay).
	3rd	• On Arduino and display on LCD Interfacing Relay module to demonstrate Bluetooth based home automation• application. (using Bluetooth and relay).
	4th	• On Arduino and display on LCD Interfacing Relay module to demonstrate Bluetooth based home automation• application. (using Bluetooth and relay).

15th	1st	• On Arduino and display on LCD Interfacing Relay module to demonstrate Bluetooth based home automation• application. (using Bluetooth and relay).
	2nd	• On Arduino and display on LCD Interfacing Relay module to demonstrate Bluetooth based home automation• application. (using Bluetooth and relay).
	3rd	• On Arduino and display on LCD Interfacing Relay module to demonstrate Bluetooth based home automation• application. (using Bluetooth and relay).

	4th	• On Arduino and display on LCD Interfacing Relay module to demonstrate Bluetooth based home automation• application. (using Bluetooth and relay).