Lesson plan for the Session Summer-2024
(6th SEMESTER CSE)

DISCIPLINE: Computer Science & Engineering	SEMESTER: 6TH	NAME OF THE TEACHING FACULTY: Mrs. Pratibha Patnaik
SUBJECT: CRYPTOGRAPHY & NETWORK SECURITY	NO. OF DAYS/PER WEEK CLASS ALLOTTED: 4	SEMESTER DURATION: 16/01/2024 to 28/4/2024 NO.OF WEEKS : 15

WEEK	CLASSDAY	THEORY/PRACTICALTOPICS
1ST	1ST	Possible attacks on Computers Introduction
	2ND	The need for security
	3RD	Security approach
	4TH	Principles of security
2ND	1ST	Types of attacks
	2ND	Cryptography Concepts Introduction
	3RD	Plain text & Cipher Text
	4TH	Substitution techniques
3RD	1ST	Substitution techniques
	2ND	Substitution techniques
	3RD	Transposition techniques
	4TH	Transposition techniques
4TH	1ST	Encryption &Decryption
	2ND	Symmetric & Asymmetric key cryptography
	3RD	Symmetric & Asymmetric key algorithms Introduction
	4TH	Symmetric key algorithm types
5TH	1ST	Overview of Symmetric key cryptography
	2ND	Data encryption standards
	3RD	Data encryption standards
	4TH	Data encryption standards
6TH	1ST	Over view of Asymmetric key cryptography
	2ND	Over view of Asymmetric key cryptography
	3RD	The RSA algorithm
		The RSA algorithm
	4TH	The RSA algorithm
7TH	1ST	Symmetric & Asymmetric key cryptography
	2ND	Digital signature
	3RD	Digital signature
	4TH	Digital certificate & Public key infrastructure Introduction

8TH	1ST	Digital certificates
	2ND	Digital certificates
	3RD	Private key management
	4TH	Private key management
9TH	1ST	Private key management
	2ND	PKIX Model
	3RD	PKIX Model
	4TH	Public key cryptography standards
10TH	1ST	Public key cryptography standards
	2ND	Internet security protocols Introduction
	3RD	Basic concept
	4TH	Secure socket layer
11TH	1ST	Secure socket layer
	2ND	Transport layer security
	3RD	Transport layer security
		Secure Hyper text transfer protocol(SHTTP)
	4TH	Secure Hyper text transfer protocol(SHTTP)
12TH	1ST	Time stamping protocol(TSP)
	2ND	Time stamping protocol(TSP)
	3RD	Secure electronic transaction(SET)
	4TH	Secure electronic transaction(SET)
13TH	1ST	User authentication Authentication basics
	2ND	Password
	3RD	Authentication Tokens
	4TH	Certificate based authentication
14TH	1ST	Biometric authentication
	2ND	Network Security &VPN Brief introduction of TCP/IP
	3RD	Brief introduction of TCP/IP
	4TH	Firewall
15TH	1ST	Firewall
	2ND	IP Security
	3RD	Virtual Private Network(VPN).
	4TH	Virtual Private Network(VPN).

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M.Subudhi 16/1/2024
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DISCIPLINE: Computer Science & Engineering	SEMESTER: 6TH	NAME OF THE TEACHING FACULTY: Mrs. Mousumi Subudhi
SUBJECT: INTERNET OF THINGS	NO. OF DAYS/PER WEEK CLASS ALLOTTED: 4	SEMESTER DURATION: 16/01/2024 to NO.OF WEEKS : 15

WEEK	CLASSDAY	THEORY/PRACTICALTOPICS
1ST	1ST	**Introduction to Internet of Things** Introduction
	2ND	Characteristics of IoT Applications of IoT
	3RD	IoT Categories
	4TH	IoT Enablers and connectivity layers
2ND	1ST	Baseline Technologies Sensor Actuator
	2ND	IoT components and implementation Challenges for IoT
	3RD	IOT Networking Introduction
	4TH	Terminologies
3RD	1ST	Gateway Prefix allotment
	2ND	Impact of mobility on Addressing
	3RD	Multihoming
	4TH	Deviation from regular Web
4TH	1ST	IoT identification and Data protocols
	2ND	Connectivity Technologies
	3RD	Introduction
	4TH	IEEE 802.15.4
5TH	1ST	ZigBee,6LoWPAN
	2ND	RFID, HART and wireless HART
	3RD	NFC, Bluetooth, Z wave,ISA100.11.A
	4TH	Wireless Sensor Networks Introduction
6TH	1ST	Components of a sensor node Modes of Detection
	2ND	Challenges in WSN Sensor Web
	3RD	Cooperation and Behavior Nodes in WSN Self Management of WSN Social sensing WSN
	4TH	Application of WSN Wireless Multimedia sensor network Wireless Nano sensor Networks
7TH	1ST	Underwater acoustic sensor networks WSN Coverage Stationary WSN, Mobile WSN

		2ND	M2M communication
		3RD	M2M communication
		4TH	M2M Ecosystem
8TH		1ST	M2M service Platform
		2ND	Interoperability
		3RD	Programming with Arduino
		4TH	Features of Arduino
9TH		1ST	Components of Arduino Board
		2ND	Arduino IDE
		3RD	Case Studies
		4TH	Programming with Raspberry Pi
10TH		1ST	Introduction to Programming with Raspberry Pi
		2ND	Architecture and Pin Configuration
		3RD	Case studies
		4TH	Implementation of IoT with Raspberry Pi
			Implementation of IoT with Raspberry PI
11TH		1ST	Software defined Networking
		2ND	Limitation of current network
			Origin of SDN SDN Architecture
		4TH	Rule Placement, Open flow Protocol Controller placement
12TH		1ST	Security in SDN Integrating SDN in IoT
		2ND	Smart Home
		3RD	Origin and example of Smart Home Technologies
		4TH	Origin and example of Smart Home Technologies
13TH		1ST	Smart Home Implementation
		2ND	Smart Home Implementation
		3RD	Home Area Networks(HAN) Smart Home benefits and issues
		4TH	Smart Cities Characteristics of Smart Cities
14TH		1ST	Smart city Frameworks
		2ND	Challenges in Smart cities Data Fusion
		3RD	Smart Parking
		4TH	Energy Management in Smart cities

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

M Subudhi
12/11/2024
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DISCIPLINE: Computer Science & Engineering	SEMESTER: 6TH	Name Of The Teaching Faculty: Mr. Pramod Kumar Swain & Mrs. Pratibha Patnaik
SUBJECT: CLOUD COMPUTING	NO. OF DAYS/PER WEEK CLASS ALLOTTED: 4	SEMESTER DURATION: 16/01/2024 to 26/4/2024 NO.OF WEEKS : 15
WEEK	CLASSDAY	THEORY/PRACTICALTOPICS
1st	1ST	**Introduction To Cloud Computing** Historical development
	2ND	Vision of Cloud Computing Characteristics of Cloud computing
	3RD	Cloud computing Reference model Cloud computing environment
	4TH	Cloud Service requirements Cloud and Dynamic Infrastructure
2nd	1ST	Cloud Adoption Cloud applications
	2ND	Cloud Computing Architecture Introduction
	3RD	Cloud Reference Model
	4TH	Types of Clouds
3rd	1ST	Types of Clouds
	2ND	Cloud Interoperability and standards
	3RD	Cloud Interoperability and standards
	4TH	Cloud computing Interoperability use cases
4th	1ST	Role of standards in Cloud Computing environment
	2ND	Scalability and Fault Tolerance Introduction
	3RD	Scalability and Fault Tolerance Cloud solutions
	4TH	Cloud Ecosystem Cloud Business process management
5th	1ST	Portability and Interoperability Cloud Service management
	2ND	Cloud Offerings
	3RD	Testing under Control
	4TH	Cloud service Controls
6h	1ST	Virtual desktop Infrastructure
	2ND	Cloud Management and Virtualization Technology Introduction
	3RD	Create a virtualized Architecture Data Centre
	4TH	Resilience Agility
7th	1ST	Cisco Data Centre Network architecture Storage

	2ND	Provisioning Asset Management	
	3RD	Concept of Map Reduce Cloud Goverance	
	4TH	Load Balancing High Availability	
8th	1ST	Disaster Recovery	
	2ND	Virtualisation Bet work Virtualisation	
	3RD	Desktop and Application Virtualisation Desktop as a service	
	4TH	Local desktop Virtualisation Virtualisation benefits	
9th	1ST	Server Virtualisation	
	2ND	Block and File level Storage Virtualisation	
	3RD	Virtual Machine Monitor	
	4TH	Infrastructure Requirements	
10th	1ST	VLAN and VSAN	
	2ND	Cloud Security Cloud Security Fundamentals	
	3RD	Cloud security services	
	4TH	Design Principles	
11th	1ST	Design Principles	
	2ND	Secure Cloud software requirements	
	3RD	Secure Cloud software requirements	
	4TH	Policy Implementation	
12th	1ST	Cloud Computing Security Challenges	
	2ND	Cloud Computing Security Architecture Architectural Considerations	
	3RD	Information Classification Virtual Private Networks	
	4TH	Public Key and Encryption Key management Digital certificates	
13th	1ST	Key management Memory Cards	
	2ND	Implementing Identity Management Controls and Autonomic System	
	3RD	Market Based Management of Clouds	
	4TH	Cloud Information security vendors	
14th	1ST	Cloud Federation, charactrization	
	2ND	Cloud Federation stack	
	3RD	Third Party Cloud service Case study	
	4TH	Hadoop Introduction	

15th	1ST	Data Source
	2ND	Data storage and Analysis
	3RD	Data storage and Analysis
	4TH	Comparison with other system

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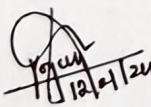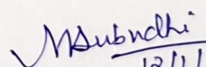
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DISCIPLINE: **Computer Science & Engineering**	SEMESTER: **6TH**	NAME OF THE TEACHING FACULTY: **Mrs. Yogesawari Magar**	
SUBJECT: **ARTIFICIAL INTELIGENCE & MACHINE LEARNING**	NO. OF DAYS/PER WEEK CLASS ALLOTTED: **4**	SEMESTER DURATION: **16/01/2024** to NO.OF WEEKS : **15**	26/4/2024
WEEK	**CLASSDAY**	**THEORY/PRACTICALTOPICS**	
1st	1ST	**Introduction to AI** Definition of AI,	
	2ND	History of AI Goals and Applications of AI	
	3RD	Intelligent agent Computer vision	
	4TH	Natural Language Processing	
2nd	1ST	Turing test	
	2ND	Problem solving in Games	
	3RD	Problem solving in Games	
	4TH	Problem solving in Games	
3rd	1ST	Problem solving in Games	
	2ND	Introduction to Search Algorithm Search, Search space	
	3RD	Search Tree Categories and Types of Search	
	4TH	Heuristic Algorithm vrs Solution Guaranteed Algorithm	
4th	1ST	Heuristic Algorithm vrs Solution Guaranteed Algorithm	
	2ND	Local search and Optimal problem(Hill climbing, BFS,A*,AO*)	
	3RD	Local search and Optimal problem(Hill climbing, BFS,A*,AO*)	
	4TH	Local search and Optimal problem(Hill climbing, BFS,A*,AO*)	
5th	1ST	Adversarial Search	
	2ND	AI and Game Playing	
	3RD	Knowledge Representation and Reasoning What to represent	
	4TH	Knowledge Properties of Knowledge Representation system	
6h	1ST	Knowledge Properties of Knowledge Representation System	
	2ND	Approaches Knowledge Representation	
	3RD	Reasoning	
	4TH	Types of reasoning	
7th	1ST	Types of reasoning	
	2ND	Machine Learning	
	3RD	Machine Learning	
	4TH	Machine Learning	
8th	1ST	Statistical or Unsupervised Learning	

	2ND	Statistical or Unsupervised Learning	
	3RD	ML Properties	
	4TH	ML Properties	
9th	1ST	Reinforcement Learning	
	2ND	Decision Tree	
	3RD	Decision Tree	
	4TH	Pattern Recognition Introduction to Pattern recognition	
10th	1ST	Concept of Pattern recognition	
	2ND	Design Principles of Pattern recognition system	
	3RD	Design Principles of Pattern recognition system	
	4TH	Statistical Pattern recognition System	
11th	1ST	Statistical Pattern recognition System	
	2ND	Machine Perception	
	3RD	Machine Perception	
	4TH	Line Finding and Interception	
12th	1ST	Line Finding and Interception	
	2ND	Object Identification	
	3RD	Object Identification	
	4TH	Expert System	
13th	1ST	Introduction to Expert system	
	2ND	Basic Architecture	
	3RD	Basic Architecture	
	4TH	Type of Problem Solved by Expert system	
14th	1ST	Type of Problem Solved by Expert system	
	2ND	Features of an Expert System	
	3RD	Expert System Architectures	
	4TH	Expert System Architectures	
15th	1ST	Expert System Tools	
	2ND	Existing Expert Systems	
	3RD	Applications of Expert System Technology	
	4TH	Applications of Expert System Technology	

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Subudhi
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