List of New Courses Introduced in the Academic Year 2021-2022

ODD SEM

S.No	Course Code	Name of the Course
1	SITA1502	Customer Interface Design and Development
2	SITA2501	Customer Interface Design and development Lab
3	SITA3011	Block Chain technologies
4	SITA1503	Fog and Cloud Computing

SITA1502	CUSTOMER INTERFACE DESIGN AND DEVELOPMENT	L	T	P	Credits	Total Marks
		3	*	0	3	100

COURSE OBJECTIVES
- To effectively design with a range of technologies.
- To develop static websites & dynamic web applications.
- To learn new emerging web technologies.
- To gain knowledge and skills required for web development careers.
- To develop skills in the use and application of specific methods in user experience design.

UNIT 1 HTML,XML,CSS& RWD   **9 Hrs.**
Introduction To HTML- DHTML , XML – Structuring XML document using DTD – Schemas – XML parsers – DOM – SAX presentation technologies – XSL – XFORMS – XHTML – Transformations – XSLT – XLINK – XPATH – XQuery.Responsive Web Design-Intro-Fluid Grid-Viewport-Media Queries-Images.
Introduction To CSS-Syntax,Selectors-Types of style sheets.

UNIT 2   CLIENT SIDE SCRIPTING   **9Hrs.**

Java Script – Advantages – Data types – Variables – Operators – Control statements – Functions – Objects and arrays – Windows and frames – Forms.AJAX – XMLHttpRequest (XHR) – Create Object – Request – Response – Ready state.

UNIT 3   SERVER SIDE SCRIPTING   **9 Hrs.**

Introduction To PHP – Data Types – Control Structures – Arrays - Function – Html Form with PHP –Form Handling & Validation - File Handling – Cookies – Sessions – Filters – Exception Handling - Database Connectivity With MySQL.

UNIT4   ANGULAR JS & JQUERY   **9 Hrs.**
Angular JS Expression – Modules – Directives – Data Binding – Controllers – Scopes – Filters – Services – Tables – Events – Form – Validation.
jQuery Syntax – Selects – Events – jQuery Effects – jQuery – jQuery HTML – jQuery Traversing

UNIT 5 UX& UI   **9 Hrs.**
UX Introduction -Elements of UX Design- UX Design Process- Research Methods and Tools-Understanding User Needs and Goals. UX Design Process: Visual Design Principles-Information Design and Visualization-Interaction Design-Prototyping Tools-Usability Test.UI Introduction-User Interface Components -Tools and Processes.

                                                                                         Max.45Hours
COURSE OUTCOMES:
On completion of the course the student will be able to
   CO1: Able to work with XML technologies.
   CO2: Design web page to perform form validation using client-side scripting language.
   CO3: Implement new technologies such as Angular JS &jQuery.
   CO4: Develop web applications using server-side scripting language.
   CO5: Understand the differences between usability and user experience.
   CO6: Effectively select and utilize design thinking processes and UX/UI tools.

TEXT /REFERENCE BOOKS:

1. Jeffrey C. Jackson, WebTechnologies: A Computer Science Perspective, Pearson Education, 2009
2. Kogent Learning Solutions Inc., Web Technologies Black Book, Dreamtech Press, 2009.
3. Ken Williamson, Learning AngularJS: A Guide to AngularJS Development, O'Reilly, 2015

SITA2501	CUSTOMER INTERFACE DESIGN AND DEVELOPMENT LAB	L	T	P	Credits	Total Marks
		0	0	4	2	100

COURSE OBJECTIVES
- To be familiar with mark-up languages and style sheets
- To learn XML technologies and AJAX
- To develop static websites and dynamic web applications
- To gain knowledge and skills required for web development careers.
- To create web page using PHP.

LIST OF EXPERIMENTS:

1. Design a web page for your university using HTML

2. Create an Internal and External Style sheet.

3. Working with XML and CSS

4. Write a JavaScript code to perform form validation.

5. Working with AJAX

6. Working with Angular JS Directives

7. Working with Angular JS Expressions

8. Working with jQuery Selectors

9. Working with jQuery Events & Effects

10. Program to perform PHP Form Validation

11. Program to demonstrate PHP Form Handling

12. Program to create PHP Database Application using MySQL

COURSE OUTCOMES :
On completion of the course the student will be able to
   CO1: Implement static web pages using mark-up languages and style sheets
   CO2: Implement form validation using client-side scripting language
   CO3: Implementation of new technologies: Angular JS &jQuery
   CO4: Develop web applications using server-side scripting language
   CO5: Develop web applications with database connectivity.
   CO6: Create web page using PHP concepts

SITA1503	FOG AND CLOUD COMPUTING	L	T	P	Credits	Total Marks
		3	0	0	3	100

COURSE OBJECTIVES

- To understand the basic concepts of cloud computing and cloud enables.
- To understand cloud services and Multi-tenancy computing
- To study about various models of cloud environments and virtualization.
- To manage the cloud computing infrastructure with security.
- To gain knowledge of cloud and to understand about Fog, edge computing.

UNIT 1 UNDERSTANDING CLOUD COMPUTING   9 Hrs.

Basic Concepts and Terminology - Cloud Computing Architectural Framework - Types of Clouds - pros and cons of cloud computing – Cloud Characteristics - difference between web 2.0 and cloud - key challenges in cloud computing - Major Cloud players - Virtualization in Cloud Computing - Parallelization in Cloud Computing - cloud resource management – Cloud Enabling Technology

UNIT 2 CLOUD SERVICE MODELS   9 Hrs

Software as a Service (SaaS) - Infrastructure as a Service (IaaS)- Platform as a Service (PaaS)- Web services - Service Oriented Architecture (SoA) - Elastic Computing - On Demand Computing- Service Management in Cloud Computing - Multi-tenancy computing , architecture.

UNIT 3 CLOUD DEPLOYMENT MODELS and VIRTUALIZATION   9 Hrs.

Deployment models: Public cloud – Private Cloud –Hybrid cloud – Community cloud - Need for virtualization – Types of Virtualization – Virtualization OS – VMware, KVM – System VM – Process VM - Virtual Machine Monitor – Properties - Xen, Hyper V, Virtual Box, Eucalyptus .

UNIT 4   MANAGEMENT IN CLOUD COMPUTING &SECURITY   9 Hrs.

Cloud data centres - Energy efficiency in data centre - Data Management in Cloud Computing - Mobile cloud computing service models – Open Source and Commercial Clouds, Cloud Simulator – sensor cloud- Fundamental Cloud security – Cloud security Threads – Additional considerations – Security solutions a case study.

UNIT 5 FOG COMPUTING   9 Hrs.

From Cloud to Fog - Fog Computing architecture - fog networks - Principles of Edge/P2P networking - Security and privacy in Fog.

                                                                    Max.45Hours

Course Outcomes:

On completion of the course, student will be able to
CO1:   Analyze the Cloud computing setup with its vulnerabilities and applications using different architectures.
CO2:   Implement and install the cloud tools to make enable the cloud computing infrastructures.
CO3:   Apply and design suitable Virtualization concept, Cloud Resource Management and collaboration services.
CO4:   Create combinatorial auctions for cloud resources and services for computing clouds Develop and make cloud services as commercial.
CO5:   Assess cloud and cloud to Fog with IoT.
CO6:   Ability to, understand fog computing architecture

TEXT / REFERENCE BOOKS

1. Cloud computing concepts, technology and Architecture – Thomas Erl, ZaighamMahmood, Ricardo Puttini , Pearson , 2017.
2. Instant Guide to Cloud Computing, AnandNayar(Ed), Ashokkumar, sudeepTanwar, BPB, 2019.
3. Cloud computing a practical approach - Anthony T.Velte, Toby J. Velte Robert Elsenpeter TATA McGraw - Hill, New Delhi - 2010
4. Cloud Computing: Web-Based Applications That Change the Way You Work and Collaborate Online - Michael Miller - Que 2008
5. Cloud Security: A Comprehensive Guide to Secure Cloud Computing, Ronald L. Krutz, Russell Dean Vines, Wiley-India, 2010
6. Fog Computing Concepts, Frameworks and Technologies ,Mahmood, Zaigham (Ed.), Springer , 2018.

END SEMESTER EXAM QUESTION PAPER PATTERN

Max. Marks: 100   **Exam Duration:3 Hrs.**
Part A: 10 questions carrying 2 marks each – No choice   20 marks
Part B: 2 questions from each unit of internal choice, each carrying 16 marks   80 marks

SITA3011	BLOCK CHAIN TECHNOLOGIES	L	T	P	Credits	Total Marks
		3	0	0	3	100

COURSE OBJECTIVES

- To introduce Bit coin and other crypto currencies.
- To study the algorithms and techniques in block chain.
- To understand the practical aspects in the design of crypto currency
- To understand the function of Block chains as a method of securing distributed ledgers.
- To design, code, deploy and execute a smart contract.

UNIT 1   INTRODUCTION TO BLOCKCHAIN   9Hrs.

Basics of blockchain-Public Ledgers-Block Chain as Public Ledgers-Types of Block chains- Pillars of Block chain-Government Initiatives of BlockChain-Bitcoin-SmartContracts

UNIT 2   ARCHITECTURE AND CONCEPTUALIZATION OF BLOCK CHAIN, CRYPTO CURRENCIES   9Hrs.

Block in a Block chain-find Transactions-Distributed Consensus-Proof of work, Stake, Space-Attacks on POW-Ethereum-Pos/POW Hybrids-Crypto currency to block chain 2.0, Model of Blockchain-Algorand

UNIT 3   CRYPTO PRIMITIVES, SECURING AND INTERCONNECTING PUBLIC AND PRIVATE BLOCK CHAINS   9Hrs.

Hash Function and Merle Tree-Security Properties-Security Considerations for block chain-Digital Signature-Public Key Cryptography-Bit coinblock chain incentive structures- Nash Equilibriums- evolutionary stable strategies,-and Pareto¬ efficiency (game theory) Weaknesses and news Points of Failure¬ Mitigation Methods¬ Redundancies and fall-back methods

UNIT 4   MINING AND CRYPTO CURRENCIES - HOW TO USE AND INTERACT   9Hrs.

  Mining-Pools-Impact of CPU and GPU-Transaction in Bit coin Network- Block Mining-Block propagation and block relay

UNIT 5   USE CASES-APPLICATIONS IN DIFFERENT AREAS   9 Hrs.

Industry applications of Blockchain-Blockchain in Government-Government use cases-Preventing Cybercrime through block chain-Block Chain in defense, tax payments.

COURSE OUTCOMES :

On completion of the course the student will be able to

CO1: Explain the structure of a block chain.

CO2 : Analyze the incentive structure in a block chain based system.

CO3 : Judge the scenario where "smart" contract is most appropriate.

CO4 : Identify Basic knowledge of Bitcoin, Ethereum.

CO5 : Apply Blockchain in future use cases for security.

CO6 : Understand the various Block Chain applications.

TEXT / REFERENCE BOOKS :

1. Mastering Bitcoin: Unlocking Digital Cryptocurrencies, by Andreas Antonopoulos O'Reilly, First Edition, 2014.
2. Blockchain by Melanie Swa, O'Reilly Media 2015
3. Zero to Block chain - An IBM Redbooks course, by Bob Dill, David Smits -

END SEMESTER EXAM QUESTION PAPER PATTERN

Max. marks:100   Exam Duration:3 Hrs.

Part A: 10 question of 2 marks each – No choice   20 marks

Part B: 2 questions from each unit of internal choice, each carrying 16 marks   80 marks