Information Technology

Academic Year 2021-22

Semester – V

V	ITC501	Internet Programming	4. ITC501.1	Select protocols or technologies required for various web applications.
			4. ITC501.2	Apply JavaScript to add functionality to web pages.
			4. ITC501.3	Design front end application using basic React.
			4. ITC501.4	Design front end applications using functional components of React.
			4. ITC501.5	Design back-end applications using Node.js.
			4. ITC501.6	Construct web based Node.js applications using Express.
V	ITC502	Computer Network Security	5.ITC502.1	Explain the fundamentals concepts of computer security and network security
			5.ITC502.2	Identify the basic cryptographic techniques using classical and block encryption methods.
			5.ITC502.3	Study and describe the system security malicious software.
			5.ITC502.4	Describe the Network layer security, Transport layer security and application layer security.
			5.ITC502.5	Explain the need of network management security and illustrate the need for NAC.
			5.ITC502.6	Identify the function of an IDS and firewall for the system security.
V	ITC503	Entrepreneurship and E-business	6.ITC503.1	Understand the concept of entrepreneurship and its close relationship with enterprise and owner-management.
			6.ITC503.2	Understand the nature of business development in the context of existing organizations and of new business start-ups.
			6.ITC503.3	Comprehended important factors for starting a new venture and business development.
			6.ITC503.4	Know issues and decisions involved in financing and resourcing a business start-up
			6.ITC503.5	Describe various E-business Models
			6.ITC503.6	Discuss various E-business Strategies.

V	ITC504	Software Engineering	6.ITC504.1	Understand and use basic knowledge in software engineering.
			6.ITC504.2	Identify requirements, analyze and prepare models.
			6.ITC504.3	Plan, schedule and track the progress of the projects.
			6.ITC504.4	Design & develop the software solutions for the growth of society
			6.ITC504.5	To demonstrate and evaluate real time projects with respect to software engineering principles
			6.ITC504.6	Apply testing and assure quality in software solution
V	ITL501	IP Lab	4.ITL501.1	Identify and apply the appropriate HTML tags to develop a webpage.
			4.ITL501.2	Identify and apply the appropriate CSS tags to format data on webpage
			4.ITL501.3	Construct responsive websites using Bootstrap
			4.ITL501.4	Use JavaScript to develop interactive web pages.
			4.ITL501.5	Construct front end applications using React
			4.ITL501.6	Construct back end applications using Node.js/Express
V	ITL502	Security Lab	5.ITL502.1	Illustrate symmetric cryptography by implementing classical ciphers.
			5.ITL502.2	Demonstrate Key management, distribution and user authentication.
			5.ITL502.3	Explore the different network reconnaissance tools to gather information about networks
			5.ITL502.4	Use tools like sniffers, port scanners and other related tools for analyzing packets in a network.
			5.ITL502.5	Use open-source tools to scan the network for vulnerabilities and simulate attacks.
			5.ITL502.6	Demonstrate the network security system using open source tools.
V	ITL503	DevOPs Lab	6.ITL503.1	To understand the fundamentals of DevOps engineering and be fully proficient with DevOps terminologies, concepts, benefits, and deployment options to meet your business requirements

			6.ITL503.2	To obtain complete knowledge of the õversion control systemö to effectively track changes augmented with Git and GitHub
			6.ITL503.3	To understand the importance of Jenkins to Build and deploy Software Applications on server environment
			6.ITL503.4	Understand the importance of Selenium and Jenkins to test Software Applications
			6.ITL503.5	To understand concept of containerization and Analyze the Containerization of OS images and deployment of applications over Docker
			6.ITL503.6	To Synthesize software configuration and provisioning using Ansible
ITL504	ITL504	Advance DevOps Lab	6.ITL504.1	To understand the fundamentals of Cloud Computing and be fully proficient with Cloud based DevOps solution deployment options to meet your business requirements
			6.ITL504.2	To deploy single and multiple container applications and manage application deployments with rollouts in Kubernetes
			6.ITL504.3	To apply best practices for managing infrastructure as code environments and use terraform to define and deploy cloud infrastructure
			6.ITL504.4	To identify and remediate application vulnerabilities earlier and help integrate security in the development process using SAST Techniques.
			6.ITL504.5	To use Continuous Monitoring Tools to resolve any system errors (low memory, unreachable server etc.) before they have any negative impact on the business productivity
			6.ITL504.6	To engineer a composition of nano services using AWS Lambda and Step Functions with the Serverless Framework
ITL505	ITL505	Professional Communication & Ethics-II (PCE-II)	6.ITL505.1	plan and prepare effective business/ technical documents which will in turn provide solid foundation for their future managerial roles.
			6.ITL505.2	strategize their personal and professional skills to build a

				professional image and meet the demands of the industry.
			6.ITL505.3	emerge successful in group discussions, meetings and result-oriented agreeable solutions in group communication situations.
			6.ITL505.4	deliver persuasive and professional presentations.
			6.ITL505.5	develop creative thinking and interpersonal skills required for effective professional communication.
			6.ITL505.6	apply codes of ethical conduct, personal integrity and norms of organizational behaviour.
V	ITM501	Mini Project ó 2 A Web Based Business Model	9.ITM501.1	Identify problems based on societal /research needs and Apply knowledge and skill to solve societal problems in a group.
			9.ITM501.2	Draw the proper inferences from available results through theoretical/ experimental/simulations.
			9.ITM501.3	Analyse the impact of solutions in societal and environmental context for sustainable development.
			9..ITM501.4	Demonstrate project management principles during project work and Use standard norms of engineering practices
			9.ITM501.5	Develop interpersonal skills to work as a member of a group or leader and Excel in written and oral communication.
			9.ITM501.6	Demonstrate capabilities of self-learning in a group, which leads to life-long learning.
V	ITDO5012	Advance Data Management Technologies	3.ITDO5012.1	Measure query costs and design alternate efficient paths for query execution.
			3.ITDO5012.2	Apply sophisticated access protocols to control access to the database.
			3.ITDO5012.3	Implement Distributed databases.
			3.ITDO5012.4	Organize strategic data in an enterprise and build a data Warehouse.
			3.ITDO5012.5	Analyse data using OLAP operations so as to take strategic decisions.

			3.ITDO5012.6	Design modern applications using NoSQL databases. databases.
V	ITDO5013	Computer Graphics & Multimedia System	5.ITDO5013.1	Describe the basic concepts of Computer Graphics.
			5.ITDO5013.2	Demonstrate various algorithms for basic graphics primitives.
			5.ITDO5013.3	Apply 2-D geometric transformations on graphical objects. Use various Clipping algorithms on graphical objects
			5.ITDO5013.4	Explore 3-D geometric transformations and curve representation techniques.
			5.ITDO5013.5	Describe the basics of Multimedia System
			5.ITDO5013.6	Explore the Digital images audio & video and their related concepts.
V	ITDO5014	Advanced Data structure and Analysis	2.ITDO5014.1	Understand the different methods for analysis of algorithms.
			2.ITDO5014.2	Choose an appropriate advanced data structure to solve a specific problem.
			2.ITDO5014.3	Apply an appropriate algorithmic design approach for a given problem.
			2.ITDO5014.4	Apply the dynamic programming technique to solve a given problem
			2.ITDO5014.5	Select an appropriate pattern matching algorithm for a given application.
			2.ITDO5014.6	Understand the concepts of Optimization, Approximation and Parallel computing algorithms.