



Mahavir Education Trust's  
**Shah & Anchor Kutchhi Engineering College,**  
 Chembur, Mumbai 400 088  
**UG Program in Information Technology**

**Academic Year 2020-21**

**Semester – V**

<b>Information Technology</b> <b>Academic Year 2020-21</b>				
V	ITC501	Microcontroller and Embedded Programming	ITC501.1	Recall basic concept of Embedded System and its core elements
			ITC501.2	Describe architecture of 8051 Micro-controller, ARM7 and Open source RTOS
			ITC501.3	Write Programs based on 8051 and ARM7
			ITC501.4	Classification of Embedded System elements and Design the interfacing for 8051
			ITC501.5	Demonstrate the various RTOS and Embedded Boards
			ITC501.6	Examine various Components of Embedded System
V	ITC502	Internet Programming	4.ITC502.1	Implement interactive web page(s) using HTML,CSS and JavaScript.
			4.ITC502.2	Design a responsive web site using HTML5 and CSS3.
			4.ITC502.3	Demonstrate Rich Internet Application.
			4.ITC502.4	Build Dynamic web site using server side PHP Programming and Database connectivity.
			4.ITC502.5	Describe and differentiate different Web Extensions and Web Services.
			4.ITC502.6	Demonstrate web application using Python web Framework-Django
V	ITC503	Advanced Data Management Technology	4.ITC503.1	Explain and understand the concept of a transaction and how ACID properties are maintained when concurrent transaction occur in a database
			4.ITC503.2	Measure query costs and design alternate efficient paths for query execution.
			4.ITC503.3	Apply sophisticated access protocols to control access to the database.
			4.ITC503.4	Implement alternate models like Distributed databases and Design applications using advanced models like mobile, spatial databases.
			4.ITC503.5	Organize strategic data in an enterprise and build a data Warehouse.
			4.ITC503.6	Analyze data using OLAP operations so as to take strategic decisions.
V	ITC504	Cryptography & Network Security	5.ITC504.1	Identify information security goals, classical encryption techniques and acquire fundamental knowledge on the concepts of finite fields and number theory.



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			5.ITC504.2	Understand, compare and apply different encryption and decryption techniques to solve problems related to confidentiality and authentication
			5.ITC504.3	Apply the knowledge of cryptographic checksums and evaluate the performance of different message digest algorithms for verifying the integrity of varying message sizes
			5.ITC504.4	Apply different digital signature algorithms to achieve authentication and create secure applications
			5.ITC504.5	Apply network security basics, analyze different attacks on networks and evaluate the performance of firewalls and security protocols like SSL, IPsec, and PGP.
			5.ITC504.6	Apply the knowledge of cryptographic utilities and authentication mechanisms to design secure applications
V	ITDLO5011	Advanced Data Structures & Analysis of Algorithms	2.ITDLO5011.1	Students will be able to choose appropriate advanced data structure for given problem.
			2.ITDLO5011.2	Students will be able to calculate complexity.
			2.ITDLO5011.3	Students will be able to select appropriate design techniques to solve real world problems.
			2.ITDLO5011.4	Students will be able to apply the dynamic programming technique to solve the problems.
			2.ITDLO5011.5	Students will be able to apply the greedy programming technique to solve the problems.
			2.ITDLO5011.6	Students will be able to select a proper pattern matching algorithm for given problem.
V	ITDLO5013	E-Commerce & E-Business	4.ITDLO5013.1	To Define and differentiate various types of E-commerce.
			4.ITDLO5013.2	To Describe Hardware and Software Technologies for E-commerce.
			4.ITDLO5013.3	To Explain payment systems for E-commerce.
			4.ITDLO5013.4	To Describe the process of Selling and Marketing on web.
			4.ITDLO5013.5	To Define and Describe E-business and its Models.
			4.ITDLO5013.6	To Discuss various E-business Strategies.
V	ITL505	Business Communication	9.ITL505.1	Design a technical document using precise language, suitable vocabulary, and apt style.



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		And Ethics	9.ITL505.2	Develop the life skills/ interpersonal skills to progress professionally by building stronger
			9.ITL505.3	Demonstrate awareness of contemporary issues, knowledge of professional and ethical
			9.ITL505.4	Apply the traits of a suitable candidate for a job/higher education, upon being trained in the techniques of holding a group discussion, facing interviews and writing resume/SOP.
			9.ITL505.5	Deliver formal presentations effectively, implementing the verbal and non- verbal skills
			9.ITL505.6	Demonstrate skills for participating in meetings and prepare its documentation.
			4.ITL.501.1	Design a basic web site using HTML5 and CSS3 to demonstrate responsive web design.
			4.ITL.501.2	Implement dynamic web pages with validation using JavaScript objects by applying different event handling mechanism.
			4.ITL.501.3	Use AJAX Programming Technique to develop RIA
			4.ITL.501.4	Develop simple web application using server side PHP programming and Database Connectivity using MySQL.
			4.ITL.501.5	Build well-formed XML Document and implement Web Service using Java.
V	ITL.501	Internet Programming Lab	4.ITL.501.6	Demonstrate simple web application using Python Django Framework.
			5.ITL502.1	Apply the knowledge of symmetric cryptography to implement simple ciphers.
			5.ITL502.2	Implement public key algorithms.
			5.ITL502.3	Analyze and evaluate the performance of hashing algorithms
			5.ITL502.4	Explore the different network reconnaissance tools to gather information about networks.
			5.ITL502.5	Use tools like sniffers, port scanners and other related tools for analyzing packets in a network.
			5.ITL502.6	Apply and set up firewalls and intrusion detection systems using open source technologies and to explore email security.
V	ITL.502	Security Lab		
			ITL503.1	Implement simple query optimizers and design alternate efficient paths for query execution.
			ITL503.2	Simulate the working of concurrency protocols, recovery mechanisms in a database
V	ITL.503	OLAP Lab		