



# GUJARAT TECHNOLOGICAL UNIVERSITY

Syllabus for Bachelor of Vocation (B.Voc), 4<sup>th</sup> Semester

Branch: Software Development

Subject Name: Window Configuration and Server Administration

Subject Code: 21140203

With effective  
from academic  
year 2022-23

**Type of course:** Core

**Prerequisite:** IT Fundamentals, Fundamentals of OOP, Windows Development Fundamentals

**Rationale:** To access remote programs, data, and hardware resources lying either on the same organization's computers or from other enterprises or public sources for resource sharing, ecommerce, use of social network etc, connecting the IT resources is the prime requirement of today. The computer networks provide communication possible. In this scenario the management and administration of network in effective manner becomes an important aspect. The course introduces students to the fundamentals of network management, primarily for TCP/IP networks. The students of this course will be able to design, install, configure and experience hands-on management of typical network components. They will also be able to administer and manage the network. After learning this course student will be employable in the industry working in the area of network installation and management or they can start their own business providing hardware and software solutions to different organization in the area of networking.

### Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks				Total Marks
L	T	P		Theory Marks		Practical		
			ESE (E)	PA(M)	ESE (V)	PA (I)		
3	0	0	3	50	0	0	0	50

L- Lectures; T- Tutorial/Teacher Guided Student Activity; P- Practical; C- Credit;  
ESE- EndSemester Examination; PA- Progressive Assessment

### Content:

Sr. No.	Content	Total Hrs.	Module % Weightage
1	<b>Understanding Windows Programming Basics:</b> Windows Programming, .NET Framework Architecture, Understand configuration files, Understand controls, Identify Windows application types, Implement user interface design. <b>Creating Windows Forms Applications:</b> Basics of Windows Forms applications, Development of console-based applications, Windows services Create and handle events, Understand Windows Forms inheritance, understand how to create new controls and extend existing controls, Validate and implement user input, Debug a Windows-based application.	10	20
2	<b>Creating Windows Services Applications:</b> Create a Windows Services application, Install Windows Services application. <b>Accessing Data in a Windows Forms Application:</b> Understand data access methods for a Windows Application, Understand data bound controls. <b>Deploying a Windows Application:</b> Understand windows application deployment methods, integrating data.	08	20



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3	<b>Network basics:</b> Computer Network, History, Type of Networks, Network parameters, Circuit Switching and Packet Switching, Topologies, Transmission media, Install UTP(Straight, Cross, Rollover Cables), IP Addressing, Subnet, OSI Model and its layers, TCP/IP Model, UDP, Wireless Network, Network Devices <b>Installation:</b> Installation Server, Drivers, Working with windows server Devices, Troubleshooting Devices & Drivers, and Managing system updates. <b>Working With Disk Storage:</b> Type of Disk Storage, Type of volumes, Implementing fault tolerance, Use disk management tools, Disk Quota, Troubleshooting disk management, Shadow copy	12	30
4	<b>Domain Controller:</b> Introduction of Domain Controller, Active Directory(AD) and its components, AD features, AD schema and its components, Install Active Directory, Manage and maintain Active Directory Component, Working with OU Structure, Working with Domain User account, Working with Domain Groups, Troubleshooting Active Directory. <b>Domain Name Services (DNS):</b> Define Name resolution, Install DNS, Configure DNS Client, Manage and Troubleshoot DNS. <b>Dynamic Host Configuration Protocol:</b> Configure DNS Server, Working With Super Scope, Configure DHCP Client, Manage and Troubleshoot DHCP Server. <b>Backup and Restore:</b> Requirement for Backup and Recovery AD, Issue for AD Backup and Recovery, Steps for Backup and Recovery AD.	12	30
	<b>Total</b>	<b>42</b>	<b>100</b>

### Reference Books:

1. Programming .NET Windows Applications, Dan Hurwitz and Jesse Liberty, O'Reilly
2. Mastering Windows Server 2019, Jordan Krause, Packt

### Suggested Specification table with Marks (Theory): (For BVOC only)

Distribution of Theory Marks					
R Level	U Level	A Level	N Level	E Level	C Level
10	20	20	0	0	0

Legends: R: Remembrance; U: Understanding; A: Application, N: Analyze and E: Evaluate C: Create and above Levels (Revised Bloom's Taxonomy)

### Course Outcomes:

Sr. No.	CO Statement	Marks % Weightage
CO-1	Understand basics of Windows Programming basics	20
CO-2	Understanding of deploying a windows applications	20
CO-3	Understanding of networking	30
CO-4	Understanding of DNS and DHCP	30

### List of Open Source Software/learning website:

Students must refer to following sites to enhance their learning ability.

1. [http://itacademy.csc.liv.ac.uk/sites/itacademy.csc.liv.ac.uk/files/MTA\\_SSG\\_WinDev\\_individual\\_without\\_crop.pdf](http://itacademy.csc.liv.ac.uk/sites/itacademy.csc.liv.ac.uk/files/MTA_SSG_WinDev_individual_without_crop.pdf)
2. <https://docs.microsoft.com/en-us/windows-server/identity/ad-ds/deploy/troubleshooting-domain-controller-deployment>