

Detailed Syllabus
(With effect from Academic Year 2017-2018)

Maharaja Krishnakumarsinhji Bhavnagar University
BACHELOR OF SCIENCE IN IT (B.Sc IT)

BACHELOR OF SCIENCE - INFORMATION TECHNOLOGY (B.Sc.(IT))

Semester-IV (SY)

Course No.	Course Type	Subject	Credit
B.Sc.(IT)-EC-401	ELECTIVE		02
B.Sc.(IT)-FC-401	FOUNDATION		02
B.Sc.(IT)-CC-401	CORE	WINDOW PROGRAMMING USING VB.NET	03
B.Sc.(IT)-CC-402	CORE	DATABASE CONCEPT AND TOOLS	03
B.Sc.(IT)-CC-403	CORE	COMPUTER NETWORK	03
B.Sc.(IT)-CC-404	CORE	OPERATING SYSTEM-II	03
B.Sc.(IT)-CC-405	CORE	PRACTICAL (BASED ON 401 AND 402)	12
Total			28

Internal Continuous Evaluation:

1. There will be Internal Continuous Evaluation in Theory papers of Core Course.
2. There will be 30 marks for Assignments in Course No: B.Sc.(IT)-CC-401, B.Sc.(IT)-CC-402, B.Sc.(IT)-CC-403, B.Sc.(IT)-CC-404

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BACHELOR OF SCIENCE IN IT (B.Sc IT)

B.Sc IT		Course: Window Programming Using VB.NET		Course No: B.Sc IT-CC-401	
Semester: 04		Type of Course : Core Course			
Marking Scheme: External Examination: 70 + Internal Examination: 30 = 100					
Credits: 03		Theory Sessions per Week: 03		Teaching Hours: 45 Hours	
Unit	Detailed Syllabus	Teaching Hours	Marks/Weight		
Unit-1	Introduction	9	14		
	<ul style="list-style-type: none"> • .Net Framework, Common Language Runtime • Feature & Advantages of CLR. • JIT & It's Types : Pre-JIT, Econo-JIT, Normal-JIT • Introduction to Integrated Development Environment (IDE) • Programming Construct – Variable, Datatype, Type Casting, control structure, looping statement, array, function & procedure, Exception Handling. • Console Application 				
Unit-2	Basic Controls	9	14		
	<ul style="list-style-type: none"> • Introduction of form. • Label, Textbox, Button. • Link Label, Combo box, List box, Checkbox, Radio button, Scrollbar. • Timer Control, Group box, Panel • Event Handling, Method & Property of controls. 				
Unit-3	Advance Control	9	14		
	<ul style="list-style-type: none"> • MDI & SDI form, Main Menu Strip & Context Menu. • Rich text box, Picture box, Date time Picker. • Track bar, Notify Icon, Progress Bar, Tool tip • Built In Dialog box (Open File Dialog, Save File Dialog, Color Dialog, Font Dialog, Folder Browser Dialog) 				
Unit-4	Database Connectivity	9	14		
	<ul style="list-style-type: none"> • ADO.Net Architecture. • Create database using MS Access and accessing database using server explorer. • Database connectivity using programming code. • Database binding with Data Grid View & combo box. • Crystal Report. 				
Unit-5	Object Oriented Programming	9	14		
	<ul style="list-style-type: none"> • Class, Object & it's characteristics • Inheritance, Polymorphism. • Function Overloading • Properties: Read Only Properties, Write Only Properties, ReadWrite Properties • Constructor & Destructor. 				
Reference Books					
<ol style="list-style-type: none"> 1. Steven Holzner: Visual Basic .NET Programming Black Book DeramTech Press. 2. Rod Stephens: Visual Basic 2005 Programmer's 					

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BACHELOR OF SCIENCE IN IT (B.Sc IT)

B.Sc IT		Course: Database Concept & Tools	Course No: B.Sc IT-CC-402
Semester: 04		Type of Course : Core Course	
Marking Scheme: External Examination: 70 + Internal Examination: 30 = 100			
Credits: 03		Theory Sessions per Week: 03	Teaching Hours: 45 Hours
Unit	Detailed Syllabus	Teaching Hours	Marks/Weight
UNIT-1	DBMS AND RDBMS CONCEPTS	9	14
	<ul style="list-style-type: none"> • Overview of DBMS and RDBMS • Three schema Architecture • Data models :Hierarchical Model, Network model, Relational model • Object relational model 		
UNIT-2	INTRODUCTION TO ORACLE SERVER	9	14
	<ul style="list-style-type: none"> • ORACLE Server & Instances • Database Structure & Space Management • Memory & Process Structure • Client Server Architecture – Distributed Database Processing • How Oracle Works • Dr. E.F.Codd's Rules 		
UNIT-3	BASIC SQL*PLUS	9	14
	<ul style="list-style-type: none"> • Basic Data Types of ORACLE • Data Definition Language (DDL) • Data Manipulation Language (DML) • Transaction Processing Language (TPL) • Data Constraints AND Types of Data Constraints • Inbuilt Functions and Oracle Operators. 		
UNIT-4	ADVANCE SQL*PLUS	9	14
	<ul style="list-style-type: none"> • Grouping of Data • Sub queries and Types of Sub queries • Join and types of join • Schema and Schema object: View, Sequence, index, synonyms. 		
UNIT-5	INTRODUCTION TO DBA	9	14
	<ul style="list-style-type: none"> • Role of DBA. • Users: Creating a new user, grant command, deleting user. • Privileges: System privileges, object privileges, Assigning object privileges to a user, Viewing User & privileges, revoking a system & an object privileges. • Role: Creating a role, Granting privileges & roles to a role, granting role to a user, viewing the role of a user. 		
Reference Books			
<ol style="list-style-type: none"> 1. Ivan Bayross: SQL/PLSQL, The Programming Language of ORACLE, BPB Publication 2. Learn Oracle 8i. By Jose A. Ramalho. Published by: BPB 3. SQL in 21-Days - Techmedia 			

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BACHELOR OF SCIENCE IN IT (B.Sc IT)

B.Sc IT		Course: Computer Network	Course No: B.Sc IT-CC-403	
Semester: 04		Type of Course : Core Course		
Marking Scheme: External Examination: 70 + Internal Examination: 30 = 100				
Credits: 03		Theory Sessions per Week: 03		Teaching Hours: 45 Hours
Unit	Detailed Syllabus	Teaching Hours	Marks/Weight	
Unit-1	Introduction & Transmission Media	9	14	
	<ul style="list-style-type: none"> • Communication System • Analog & Digital Data • Communication Channel • Twin Wire and Co-axial cable, Fiber Optic • Radio Waves & Microwaves 			
Unit-2	Optical Fiber Communication & Satellite Communication	9	14	
	<ul style="list-style-type: none"> • Optical Source & Light Detectors • Propagation in Fiber • Basic of Routing • FDDI & DQDB • Satellite Link and Satellite Communication 			
Unit-3	Data Networks & Data Communication System	9	14	
	<ul style="list-style-type: none"> • Circuit Switching & Packet Switching • PABX • Facsimile (Fax) • Introduction to ISDN • Multiplexing – FDM, TDM & WDM 			
Unit-4	Network Topology, Architecture & Standards	9	14	
	<ul style="list-style-type: none"> • LAN, WAN, MAN • Basic Network Topologies • Ethernet, Token Bus & Token Ring • IEEE Standards 802 For LAN and MAN • Introduction to Bluetooth 			
Unit-5	Network Protocol and Firewall	9	14	
	<ul style="list-style-type: none"> • ATM & X.25 Protocol • Inter-W • Bridges, Routers And Brouters, Gateways • Repeaters, Modems, Hubs and Switches • Firewall 			
Reference Books				
<ol style="list-style-type: none"> 1. Andrews Tananbaum: Computers Networks, PHI 2. Michel and Miller: Introduction to Digital Data Communication 3. James Martin: Telecommunication and Compute 				

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BACHELOR OF SCIENCE IN IT (B.Sc IT)

B.Sc IT		Course: Operating System - II		Course No: B.Sc IT-CC-404	
Semester: 04		Type of Course : Core Course			
Marking Scheme: External Examination: 70 + Internal Examination: 30 = 100					
Credits: 03		Theory Sessions per Week: 03		Teaching Hours: 45 Hours	
Unit	Detailed Syllabus	Teaching Hours	Marks/Weight		
Unit-1	File & I/O Management	9	14		
	<ul style="list-style-type: none"> • File Concept, Characteristics of file, File operations, File system structure • Access Methods - Sequential , direct and Index sequential • Directory Structure - single level, two level, tree level, Directory operations. • Overview of I/O System, Application of I/O Interface, I/O hardware and subsystem. • Disk scheduling algorithm (FIFO, SSTF, SCAN, CSCAN) 				
Unit-2	Distributed Operating system	9	14		
	<ul style="list-style-type: none"> • Introduction and need for distributed OS • Architecture of Distributed OS • Models of distributed system • Remote procedure Calls • Distributed shared memory 				
Unit-3	Introduction to Linux Operating System	9	14		
	<ul style="list-style-type: none"> • Introduction to Linux Operating System • History, Advantage & Disadvantage of Linux Operating System. • Application area of Linux Operating System. • Linux Flavors • Desktop Environment – Xwindow, KDE & GNOME. 				
Unit-4	File Structure & Commands	9	14		
	<ul style="list-style-type: none"> • File system hierarchy standard. • Linux architecture • Shell & its types. • File & directory Command • Process command • User command • Misc. Command 				
Unit-5	Shell Script	9	14		
	<ul style="list-style-type: none"> • Introduction to Vi Editor • Mode of Vi Editor • Shell Variable, Shell Operator • Structure Language – Control structure, Iterating Statement and Array 				
Reference Books					
<ol style="list-style-type: none"> 1. Silberschatz, Galvin and Gange: Operating System Concepts, Wesley. 2. Tanenbaum A.S., “Modern Operating Systems”, 4th Edition, PHI, 2001 3. Stalling W, “Operating Systems”, 6th edition, Prentice Hall India. 4. Sumitabha Das: Concepts and Application of UNIX 4th edition Tata McGraw Hill 5. Yashwant Kanitkar: Unix Shell Programing, BPB Publication 					

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BACHELOR OF SCIENCE IN IT (B.Sc IT)

B.Sc IT				Course: Practical		Course No: B.Sc IT-CC-405	
Semester: 03				Type of Course: Core Course			
Marking Scheme: External Examination: 100 + Internal Examination: 00 = 100 Marks							
Credits: 12				Practical Sessions per Week: 12		Teaching Hours:180Hours	
Unit	Detailed Syllabus			Teaching Hours	Marks/Weight		
Unit-1	Practical Based on 401			90	50		
Unit-2	Practical Based on 402			90	50		