

Name of the Department : **DEPARTMENT OF INFORMATION TECHNOLOGY**

Academic Year : 2018-19

A. Program Outcome and Program Specific Outcomes

Name of the programme (UG/PG/M.Phil./Diploma etc.)	Programme Outcomes Students will be able to	Program Specific Outcomes Students will be able to
UG B.Voc. Inf. Tech	1. Create Programs using the C Programming Language, and Object Oriented Programming Languages such as JAVA, C++, C# & ASP.NET.	1. Assemble and Troubleshoot Personal Computers and Configure Communication Networking Devices.
	2. Work with Database Packages such as Oracle, SQL-Server, MySQL etc.	2. Develop Application for Mobile devices using Android platform.
	3. Develop Windows Service Applications, Console Applications, Web Applications, Mobile Applications and Windows Form Applications; using Software Engineering principles and concepts.	3. Implement Information Security using JAVA
	Understand the Organization of Data, Digital Circuit Design, Computer Architecture and Organization, Microprocessors and Interfacing, Programming with Assembly Language for Microprocessors.	

Name of the programme (UG/PG/M.Phil./ Diploma etc.)	Programme Outcomes Students will be able to	Program Specific Outcomes Students will be able to
PG M.Sc. Inf. Tech.	1. Acquire skills in Object Oriented programming (JAVA, ASP.NET,)	1 Create Applications with PYTHON .
	2. Gain familiarity in creating and editing Multimedia content.	2 Explain and work with Big Data . Analytic tools.
	3. Exhibit Knowledge on developing Algorithms for Computational Problems (Sorting, Searching, Backtracking etc.).	3 Develop Internet of Things . Applications for Raspberry—Pi
	4 Obtain expertise in developing Web applications, Windows application, Mobile Applications and Web services.	
	5 Gain Understanding on Internet of Things, Cloud Computing and Big Data Analytics.	

B1. Course Outcomes of all Programmes Offered by the Department

Name of the Programme : B.Voc. Inf. Tech.

Sl. No.	Name of the Course	Course Code	Program Specific Outcomes (After completing this course, the students will be able to)
1.	Fundamentals of Information Technology	U18IT101	1 Understand the Fundamentals of Computer Hardware, Software, DBMS and Software Development Principles.
			2 Understand Communication Systems, Information Security and Multimedia Content Creation.
			3 Comprehend Virtual Reality, Artificial Intelligence and other Recent Technologies in Information Technology
2	Programming with C and C++	U18IT102	1 Understand different Data Types and Operators and form expressions.
			2 Explain Input and Output operations.
			3 Employ Branching & Looping Statements.
			4 Construct programs using Arrays, Functions, Structures, Unions, Pointers and Files.
			5 Implement Object Oriented Programming Concepts.
3	PC Software Packages Lab	U18IT1P2	1 Create and manipulate documents using MS-Word
			2 Work with Spreadsheets in MS-Excel
			3 Make Presentations with MS-PowerPoint
4	C and C++ Programming Lab	U18IT1P3	1 Handle different Data Types and Operators to form expressions.
			2 Manage Input and Output operations.
			3 Employ Branching & Looping Statements.
			4 Develop programs using Arrays, Functions, Structures, Unions, Pointers and Files.
			5 Implement Object Oriented Programming Concepts.
			6 Create software using C and C++ programming languages

Sl. No.	Name of the Course	Course Code	Program Specific Outcomes (After completing this course, the students will be able to)
5	Project Work- 1	U18IT1F1	1 Gain problem solving skills.
			2 Plan & design Software Projects.
			3 Gain expertise in developing software using C / C++ programming languages
6	Database Management Systems	U18IT203	1 Differentiate Data Management Systems.
			2 Design Database Systems
			3 Implement Query Processing, Execution and Optimization.
7	Data Communication Networks	U18IT204	1 Explain the basics of communication protocols, standards , techniques & architectures of different Communication Systems
			2 Understand the characteristics, configurations and uses of Communication Networking Devices.
			3 Illustrate the working of Communication Applications.
8	DBMS Lab	U18IT2P5	1 Create, update and manipulate data in tables.
			2 Handle Queries and Functions
			3 Implement cursors, triggers and stored procedures.
9	Computer Hardware and Networking Lab	U18IT2P6	1 Assemble accessories, Install OS and Troubleshoot Personal Computers.
			2 Form Networks and establish static and dynamic routes
			3 Configure Networking Devices
			4 Implement Networking Protocols

Sl. No.	Name of the Course	Course Code	Program Specific Outcomes (After completing this course, the students will be able to)
10	Project Work-2	U18IT2F2	1 Plan & design Software Projects.
			2 Connect and Interact with Database.
			3 Test, Deploy and Implement Database Projects.
11	Programming with Java	U18IT305	1 Understand the concepts of Object Oriented Programming
			2 Create and Import Packages, handle Events and Exceptions.
			3 Establish and handle Network and Database connections.
12	Operating System	U18IT306	1 Understand the characteristics and functions of Operating Systems.
			2 Handle Threads, Concurrent Operations and Deadlocks.
			3 Manage Scheduling, Memory and I/O Devices.
13	Digital Computer Fundamentals	U18IT307	1 Gain Understanding on number systems and codes.
			2 Design Combinational and Sequential Logic Circuits.
			3 Become familiar with A/D and D/A Conversion techniques.
14	Personal Effectiveness	U18IT308	1 Move from Dependence to Independence, & from Independence to Interdependence.
			2 Acquire effectiveness in personal and public domains of life
			3 Exhibit continuous improvements in personal and public domains of life.

Sl. No.	Name of the Course	Course Code	Program Specific Outcomes (After completing this course, the students will be able to)
15	Java Programming Lab	U18IT3P7	1 Implement the concepts of Object Oriented Programming
			2 Create and Import Packages, handle Events and Exceptions.
			3 Develop Applets, employ AWT and SWING Concepts and handle Database connections.
16	Operating System Lab	U18IT3P8	1 Understand and use Linux Commands
			2 Handle Shell Scripts and Menu driven programs.
			3 Create and manage User and Groups.
			4 Monitor and manage System Log Information.
17	Multimedia Lab	U18IT3P9	1 Work with Texts, Images and Graphics
			2 Create Animations
			3 Capture / Record, Edit and Work with Audio and Video contents.
18	Project Work – 3	U18IT3F3	1 Plan & design Software Projects.
			2 Connect and Interact with Database.
			3 Test, Deploy and Implement Java Projects.
19	Data Structures and Algorithms	U18IT409	1 Understand and use the fundamental Data Structures.
			2 Handle the popular algorithms for searching, sorting, Merging.
			3 Employ variety of Greedy and Backtracking Algorithms.
20	.NET Programming	U18IT410	1 Understand the .NET Platform.
			2 Create and handle HTML, Web and Rich controls with Validations.
			3 Connect and manage Data Access with ADO.NET

Sl. No.	Name of the Course	Course Code	Program Specific Outcomes (After completing this course, the students will be able to)
21	Computer Organization and Architecture	U18IT411	1 Understand the Basic Computer, Organization and the Design of CPU.
			2 Program the Basic Computer with Hardwired and Microprogramed Controls.
			3 Gain Knowledge in Memory and I/O Organization of a Personal Computer.
22	Professional Ethics and Cyber Laws	U18IT412	1 Realize the eminence of Human Values
			2 Understand Moral and Ethical Values.
			3 Comprehend the nature and implications of cyber laws.
23	Data Structures and Algorithms Lab	U18ITP10	1 Attain skills to implement Data Structures such as Arrays, Stacks, Lists and Trees
			2 Handle algorithms for searching, sorting and Merging
			3 Employ Knapsack, Spanning Tree and Shortest Path Algorithms.
24	.NET Programming Lab	U18ITP11	1 Develop ASP.NET Applications using Web, Server Controls and Validation Controls.
			2 Create Applications to manipulate RDBMS data using ADO.NET and XML Data.
25	Web Development Lab	U18ITP12	1 Create Web Pages using HTML for handling text, tables, hyperlinks, images, lists and frames.
			2 Implement styles using CSS
			3 Develop Web Applications with Java Script.
26	Project Work- 4	U18IT4F4	1 Plan & design Web Application Projects.
			2 Connect and Interact with Database.
			3 Test, Deploy and Implement Web Applications.

Sl. No.	Name of the Course	Course Code	Program Specific Outcomes (After completing this course, the students will be able to)
27	Mobile Computing Technologies	U18IT513	1 Gain knowledge on Mobile Communication Technologies and Protocols.
			2 Have understanding on Mobile Operating Systems.
			3 Have exposure on Mobile Application Development for Android Devices
28	Microprocessor and its Application	U18IT514	1 Gain Understanding on the Architecture of Intel 8085, 8086 and other advanced Intel microprocessors.
			2 Write Assembly Language Programs for Intel 8085 microprocessor.
			3 Gain knowledge on interfacing of Microprocessors with peripheral devices.
			4 Have exposure on Microprocessor based Applications.
29	Principles of marketing	U18IT515	1 Understand the objectives, concepts, functions and principles of Marketing.
			2 Gain knowledge on Marketing Environment, Strategies and Customer buying behaviour.
			3 Explain the Types and Qualities of Service Marketing.
30	Software Engineering	U18IT5:1	1 Plan, estimate and specify requirements of software projects.
			2 Gain knowledge on Modules, Notations and Techniques used for Software Design.
			3 Understand Implementation Issues, Verification, Validation and Software Maintenance Techniques.

Sl. No.	Name of the Course	Course Code	Program Specific Outcomes (After completing this course, the students will be able to)
31	Software project Management	U18IT5:2	1 Understand the principles of Software Project Management
			2 Perform Project Evaluation, Activity Planning, Project Monitoring and Control.
			3 Manage People and Organize Teams
32	Software Testing	U18IT5:3	1 Understand Software Development Life Cycle Models
			2 Perform White Box, Black Box, Integration, System and Acceptance, Performance, Regression, Internationalization, Adhoc, Usability and Accessibility Testing.
			3 Explain the use Software Testing Techniques and Tools.
33	Mobile Application Development Lab	U18ITP13	1 Create applications such as login module, menu selection and display toast.
			2 Develop applications to perform Insert, Update, Delete and Retrieve from database
			3 Create application to play media from memory card
			4 Develop applications such as Image gallery, Views etc.
34	Assembly Language Programming Lab	U18ITP14	1 Create programs to implement data transfer.
			2 Create programs to handle arithmetic operations
			3 Create programs to handle sorting.
35	Project work-5	U18IT5F5	1 Plan & design Mobile Application Projects.
			2 Connect and Interact with Database.
			3 Test, Deploy and Implement Mobile Applications.

Sl. No.	Name of the Course	Course Code	Program Specific Outcomes (After completing this course, the students will be able to)
36	Programming with PHP and MySQL	U18IT616	1 Understand basics of PHP programming.
			2 Construct Programs using String, Files, Network, Date and Time, Regular Expression, HTML and Hashing Functions
			3 Implement Validations ,Cookies and Session Management
			4 Connect and work with MYSQL.
37	Information Security	U18IT617	1 Understand Basic Cryptographic techniques and principles.
			2 Explain the working of the Symmetric Cryptographic Algorithms such as DES, IDEA, RC4, RC5 and AES.
			3 Explain the working of the Asymmetric Cryptographic Algorithms
			4 Explain the functioning of Digital Signatures, Digital Certificates and Public Key Infrastructure.
			5 Understand the nuances of Internet Security Protocols, User Authentication and Kerberos.
			6 Understand Cryptographic solution in Java, .NET and OS.
			7 Discuss the functions of Firewalls, IPSecurity and Virtual Private Networks.
38	Entrepreneurial Development	U18IT618	1 Understand the basics of Entrepreneurship.
			2 Perform Feasibility Analysis and Survey.
			3 Acquire Managerial Skills for Entrepreneurship.
			4 Identify and prevent problems.
			5 Analyse Emerging Trends.

Sl. No.	Name of the Course	Course Code	Program Specific Outcomes (After completing this course, the students will be able to)
39	Web service Technologies	U18IT6:1	1 Understand and apply the concept of web services through XML.
			2 Explain the function of SOAP, WSDL and UDDI protocols.
			3 Understand the features of Conversations, Workflow and Transactions.
			4 Implement Secured Web Service Applications.
40	Open Source Technologies	U18IT6:2	1 Discuss the basics of Linux OS.
			2 Explain the working of Apache Web Server.
			3 Connect and work with MySQL.
			4 Understand Perl, Website Meta Language, CGI and Server Side Includes.
41	Distributed Computing Technologies	U18IT6:3	1 Understanding the basics of Distributed Computing Technologies
			2 Explain Inter-process and Group communications
			3 Explain the security systems in Distributed Computing.
			4 Handle Services, Communications and Transactions in Distributed Computing Systems.
42	PHP and MySQL programming Lab	U18ITP15	1 Create Server Side programs
			2 Create Programs using String, Files, Network, Date and Time, Regular Expression, HTML and Hashing Functions
			3 Implement Validations ,Cookies and Session Management
			4 Connect and work with MYSQL.

Sl. No.	Name of the Course	Course Code	Program Specific Outcomes (After completing this course, the students will be able to)
43	Information Security Lab	U18ITP16	1 Secure Local and Remote hosts
			2 Secure Client Server Communication
			3 Implement Cryptographic Techniques in Java.
44	Project Work -6	U18IT6F6	1 Plan & design Distributed Application Projects.
			2 Connect and Interact with Databases.
			3 Test, Deploy and Implement Distributed Applications.

B2. Course Outcomes of all Programmes Offered by the DepartmentName of the Programme : **M.Sc. Information Technology**

Sl. No.	Name of the Course	Course Code	Program Specific Outcomes (After completing this course, the students will be able to)
1	Object Oriented Programming with Java	P18IT101	1 Understand the concepts of Object Oriented Programming
			2 Create and Import Packages, handle Events and Exceptions.
			3 Implement Collection Framework.
			4 Establish and handle Database connections.
2	Data Communication Networks	P18IT102	1 Explain the basics of communication protocols, standards , techniques & architectures of different Communication Systems
			2 Understand the characteristics, configurations and uses of Communication Networking Devices.
			3 Illustrate the working of Communication Applications.
3	Data Structures and Algorithms	P18IT103	1 Understand and use the fundamental Data Structures.
			2 Handle the popular algorithms for searching, sorting, Merging.
			3 Employ variety of Greedy and Backtracking Algorithms.
4	Java Programming Lab	P18IT1P1	1 Implement the concepts of Object Oriented Programming
			2 Create and Import Packages, handle Events and Exceptions.
			3 Develop Applets
			4 Employ AWT and SWING Concepts
			5 Handle Database connections.

Sl. No.	Name of the Course	Course Code	Program Specific Outcomes (After completing this course, the students will be able to)
5	Data Communication Networks Lab	P18IT1P2	1 Form Networks and establish static and dynamic routes
			2 Configure Networking Devices
			3 Implement Networking Protocols
			4 Establish Virtual LAN Networks.
6	Multimedia Technologies	P18IT1:1	1 Understand Multimedia Authoring and tools
			2 Explain Graphics and Image data Representation.
			3 Distinguish Lossless and Lossy Compression Algorithms
			4 Identify Image Compression Standards and Video Coding
7	Relational Database Systems	P18IT204	1 Differentiate Data Management Systems.
			2 Design Database Systems
			3 Implement Query Processing, Execution and Optimization.
			4 Handle RDBMS Packages
8	Web Programming	P18IT205	1 Differentiate HTML and XHTML
			2 Implement Styles using CSS and JavaScript
			3 Implement JQuery and C#
			4 Understand the concepts and usage of OOP
			5 Experience in Client and Server based Web programming.

Sl. No.	Name of the Course	Course Code	Program Specific Outcomes (After completing this course, the students will be able to)
9	Advanced Operating Systems	P18IT206	1 Understand Basics of Operating System and Distributed Operating System
			2 Explain Real time Operating System and Operating System for Handheld Devices
			3 Comprehend the working of Memory , Process and Scheduling
			4 Knowledge of concepts and techniques used in modern operating system
10	Relational Database Systems Lab	P18IT2P3	1 Create, update and manipulate data in tables.
			2 Handle Queries and Functions
			3 Implement cursors, triggers and stored procedures.
11	Web Programming Lab	P18IT2P4	1 Create pages in HTML and XHTML
			2 Implement Styles using CSS and JavaScript
			3 Develop applications using JQuery and C#
			4 Implement the OOP concepts in ASP.NET
			5 Develop Client and Server based Web programs.
12	Software Engineering	P18IT2:1	1 Plan, estimate and specify requirements of software projects.
			2 Gain knowledge on Modules, Notations and Techniques used for Software Design.
			3 Understand Implementation Issues, Verification, Validation and Software Maintenance Techniques.
13	Mobile Technologies	P18IT307	1 Gain knowledge on Mobile Communication Technologies and Protocols.
			2 Understand different Mobile Operating Systems.
			3 Develop Applications for Android Devices

Sl. No.	Name of the Course	Course Code	Program Specific Outcomes (After completing this course, the students will be able to)
14	Programming with Python	P18IT308	1 Understand Keywords, Variables, Expressions, Iterations and Functions
			2 Explain Strings, Lists, Tuples and Dictionaries.
			3 Construct Files, Exceptions, Classes and Objects
			4 Expertise in programming with Python
15	Cloud Computing	P18IT309	1 Understand the concept of Beyond the Desktop
			2 Explain Cloud Computing for Everyone and Cloud Services
			3 Acquire knowledge on Cloud Computing Fundamentals and Cloud Architectures.
16	Mobile Applications Development Lab	P18IT3P5	1 Create applications such as login module, menu selection and display toast.
			2 Develop applications to perform Insert, Update, Delete and Retrieve from database
			3 Create application to play media from memory card
			4 Develop applications such as Image gallery, Views etc.
17	Python Programming Lab	P18IT3P6	1 Work with Keywords, Variables, Expressions, Iterations and Functions
			2 Create applications using Strings, Lists, Tuples and Dictionaries.
			3 Develop Applications using Files, Exceptions, Classes and Objects
			4 Perform Rapid Applications Development using Python

Sl. No.	Name of the Course	Course Code	Program Specific Outcomes (After completing this course, the students will be able to)
18	Unified Modelling Language	P18IT3:1	1 Explain Basic and advanced Structural Modelling
			2 Explain Basic and advanced Behavioural Modelling
			3 Gain Knowledge in Architectural Modelling
			4 Use the tools & techniques helpful for designing software applications
19	Big Data Analysis	P18IT410	1 Acquire knowledge on Data Mining concepts
			2 Explain Data Preprocessing, Data Warehouse and OLAP Technology
			3 Understand Big Data Analytic Techniques.
20	Internet of Things	P18IT4:1	1 Understand Requirements, Anatomy and Devices of IoT
			2 Explain Data and Human Interaction
			3 Knowledge on Internet of Things and proficiency in developing IoT application using Python.
21	PROJECT WORK	P18IT4PJ	1 Develop Web base Applications and Services
			2 Develop Applications for Standalone Machines or Mobile Devices.
			3 Perform Rapid Application Development

