

Annexure 'A'

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Curriculum Structure with effect from June, 2015

B. Sc. III (Computer Science) Semester V

Course Code	Title of the course with paper number	Hours/Week	Marks (50)		Credits
			Internal	End Semester	
U-COS-549	Paper-IX VB.NET	03	20	30	02
U-COS-550	Paper-X Oracle 10g SQL & PL/SQL	03	20	30	02
U-COS-551	Laboratory Course -VII	03	20	30	01
U-COS-552	Laboratory Course -VIII	03	20	30	01
Total Credits					06

Student Stay Hours: 12/Week

B. Sc. III (Computer Science) Semester VI

Course Code	Title of the course with paper number	Hours/Week	Marks (50)		Credits
			Internal	End Semester	
U-COS-649	Paper-XI ASP.NET	03	20	30	02
U-COS-650	Paper-XII Mobile Communication	03	20	30	02
U-COS-651	Laboratory Course-IX	03	20	30	01
U-COS-652	Laboratory Course-X	03	20	30	01
Total Credits					06

Student Stay Hours: 12/Week

B. Sc. – III [Computer Science] Semester V

Course: VB.NET

Course Code: U-COS-549

LEARNING OBJECTIVES:

- The student will use Visual Basic.Net to build Windows applications using structured and object-based programming techniques.
- Students will be exposed to the following concepts and skills
- Analyze program requirements
- Design/develop programs with GUI interfaces
- Code programs and develop interface using Visual Basic .Net
- Perform tests, resolve defects and revise existing code

COURSE OUTCOMES:

- Students will understand .NET Framework and describe some of the major enhancements to the new version of Visual Basic.
- Students will describe the basic structure of a Visual Basic.NET project and use main features of the integrated development environment (IDE)
- Students will create applications using Microsoft Windows Forms
- Students will create applications that use ADO. NET

Unit I : Introduction to .Net Technology and Visual Basic.Net IDE

- 1.1 Introduction to .Net [13hrs]
- 1.2 Features of .Net, Advantages of .Net,
- 1.3 Net Framework, CLR, CTS, CLS,
- 1.4 Creating a project
- 1.5 Types of project in .Net
- 1.6 Exploring and coding a project,
- 1.7 Solution explorer - toolbox, properties window, Output window, Object Browser.

Unit II : Programming with VB.Net and Understanding Console Application

- 2.1 variables, constants, operators, Data types [10hrs]
- 2.2 working with string, Methods.
- 2.3 Control statements: Making decisions, If statement, Select case, Loops
- 2.4 MsgBox and Input Box
- 2.5 Classes and Objects
- 2.6 Access Specifiers: Private, Public and Protected
- 2.7 Building Classes
- 2.8 Constructors
- 2.9 Inheritance types
- 2.10 Overloading and Overriding

Unit III : GUI Programming

- 3.1 Introduction to Window Applications [15hrs]
- 3.2 Using Form – Properties, Methods and Events.
- 3.3 Interacting with controls - Textbox, Label, Button, Listbox, Combobox, Checkbox, Picture Box, Radio Button, GroupBox, Timer, toolbar, Progress Bar.
- 3.4 Common Dialog Controls (Save, Open, Font, Color)

Unit IV: Introduction to ADO.Net

- 4.1 Connected and disconnected Object Model [7hrs]
- 4.2 Creating Connection, Command, Data Adapter, Data Reader and Data Set with OLEDB.
- 4.3 Insertion and Updation with table.

Reference Books

1. VB.Net programming Black Book, by Kogent Learning Solutions,
2. Wiley India VB.Net Step By Step, Michael Halvorson, PHI.
3. Mastering VB.Net, Evangelos Petroustos,
4. Wiley Publications Beginning VB.Net (Wrox)

B. Sc. – III [Computer Science] Semester V

Course: Oracle 10g SQL & PL/SQL

Course Code: U-COS-550

LEARNING OBJECTIVES:

- Gain a good understanding of the architecture and functioning of database management systems as well as associated tools and techniques.
- Develop a good database design and normalization techniques to normalize a database.
- Understand the use of structured query language and its syntax, transactions, database recovery and techniques for query optimization.
- Acquire a good understanding of database systems concepts and to be in a position to use and design databases for different applications.

COURSE OUTCOMES:

- Students will be able to understand the basics of Relational Databases as well as associated tools and techniques.
- Students will be able to write SQL code to build and maintain database structures.
- Students will be able to update database content with SQL.
- Students will be able to retrieve data from single or multiple tables.
- Students will be able to manipulate data with correlated and non correlated sub queries.

UNIT-I: SQL Statements & Working with Tables and Grouping Data in SQL

- 1.1. DDL, DML, DQL, DCL [12hrs]
- 1.2. Data types in SQL
- 1.3. Creating & Managing Tables
- 1.4. Manipulating Data
- 1.5. Retrieving data using SELECT Command WHERE, Order by, Distinct clause
- 1.6. Using Column Aliases
- 1.7. Using Group By & Having clause
- 1.8. Oracle view
- 1.9. Substitution Variables

UNIT-II: SQL Functions and Joining Tables & Working with Sub queries

[10hrs]

- 2.1. Single Row Functions
- 2.2. Character Functions
- 2.3. Number Functions
- 2.4. Date Functions
- 2.5. Conversion Functions
- 2.6. What is Join?
- 2.7. Natural Join/Inner Join/Equijoin/self join
- 2.8. Subqueries: Single Row Sub query, Multiple Row Sub query

UNIT – III : Security and PL/SQL

- 3.1. Creating User [13hrs]
- 3.2. Privileges: System Level Privileges, Object Level Privileges
- 3.3. Granting Privileges
- 3.4. Revoking Privileges
- 3.5. Roles: Study of default roles, Creating roles, Granting and Revoking roles
- 3.6. An Introduction to PL/SQL
- 3.7. PL/SQL Overview
- 3.8. Declaration section
- 3.9. Executable Commands section
- 3.10. Condition logic
- 3.11. Loops

UNIT – IV: Advance in PL/SQL

- 4.1. Exception Handlings [10hrs]
- 4.2. Triggers: Triggers Syntax
- 4.3. Types of triggers
- 4.4. Enabling and Disabling Triggers
- 4.5. Replacing and Dropping Triggers

Reference Books -

1. Oracle Database 10g SQL (Osborne ORACLE Press Series) by Jason price, McGrawHill, 0-07-222981-0.
2. Oracle Database 10g PL/SQL Programming by Scott Urman , Ron HARDMAN, MichaleMc Laughlin, Oracle Press, TMH, ISBN-0-07-059779-0.
3. Oracle Database 10g The Complete Reference By Kevin Loney, Bob Bryla Oracle Press (TATA McGraw Hill Edition) ISBN-13:978-0-07-059425-8, ISBN-10: 0-07-059425-2

B. Sc. – III [Computer Science] Semester V

Course: Lab Course VII

Course Code: U-COS-551

LEARNING OBJECTIVES:

- The student will use Visual Basic.Net to build Windows applications using structured and object-based programming techniques.
- Design/develop programs with GUI
- Code programs and develop interface using Visual Basic .Net

COURSE OUTCOMES:

- Students will understand .NET Framework and describe some of the major enhancements to the new version of Visual Basic.
- Students will be able to understand the basic structure of a Visual Basic.NET project and use main features of the integrated development environment (IDE)
- Students will be able to create applications using Microsoft Windows Forms.
- Students will be able to create an application that contains use of ADO. NET

(Practical List) VB.NET

1. Study of Integrated development environment in vb.net.
2. Study of project types in vb.net
3. Creating a project in VB.NET
4. Study of form with its all properties and methods.
5. Programs to demonstrate textbox, label and command buttons
6. Programs to demonstrate InputBox and MsgBox.
7. Programs to demonstrate Operators in vb.net using different controls.
8. Programs to demonstrate if-else, elseif and switch statements in vb.net.
9. Programs to demonstrate lopping statements in vb.net.
10. Programs to demonstrate listbox.
11. Programs to demonstrate ComboBox.
12. Programs to demonstrate string handling functions.
13. Programs to demonstrate database connectivity.

B. Sc. –III [Computer Science] Semester V

Course: Lab Course VIII

Course Code: U-COS-552

LEARNING OBJECTIVES:

- Gain a good understanding of the architecture and functioning of database management systems as well as associated tools and techniques.
- Develop a good database design and normalization techniques to normalize a database.
- Understand the use of structured query language and its syntax, transactions, database recovery and techniques for query optimization.
- Acquire a good understanding of database systems concepts and to be in a position to use and design databases for different applications.

COURSE OUTCOMES:

- Students will be able to understand the basics of Relational Databases as well as associated tools and techniques.
- Students will be able to write SQL code to build and maintain database structures.
- Students will be able to update database content with SQL.
- Students will be able to retrieve data from single or multiple tables.
- Students will be able to manipulate data with correlated and non correlated sub queries.

(Practical List) (Oracle 10g)

1. Creation of table.
2. Insertion of records into table.
3. Data Definition Language (DDL) commands
4. Data Manipulation (DML) Commands
5. Practical on different types of functions
6. Security commands grant and revoke
7. Object privileges
8. System Privileges
9. Practical on sub queries
10. PL/SQAL programs

B. Sc. – III [Computer Science] Semester VI

Course: ASP.NET

Course Code: U-COS-649

LEARNING OBJECTIVES:

- Set up a programming environment for ASP.net programs.
- Configure an asp.net application.
- Creating ASP.Net applications using standard .net controls.
- Develop a data driven web application.
- Connecting to data sources and managing them.
- Maintain session and controls related information for user used in multiuser web applications.
- Understand the fundamentals of developing modular application by using object oriented methodologies

COURSE OUTCOMES:

- Students will be able to design web applications using ASP.NET
- Students will be able to use ASP.NET controls in web applications
- Students will be able to debug and deploy ASP.NET web applications
- Students will be able to create database driven ASP.NET web applications and web services

Unit I : Basics of HTML and Introduction to .Net Technology

- 1.1 Rules and Guidelines of HTML [10hrs]
- 1.2 HTML Structure
- 1.3 Table Tag
- 1.4 .net framework
- 1.5 About asp.net.

Unit-II: Introduction to Asp.net 4.0 and Working in Asp.net

- 2.1. Features of asp.net [12hrs]
- 2.2. asp.net webpage life cycle
- 2.3. Server Controls
- 2.4. State Management: Session, ViewState, Querystring.
- 2.5. Client Server Model
- 2.6. IIS Manager

Unit-III: Creating User Interface

- 3.1. Creating Asp.net web application project [15hrs]
- 3.2. Validating Data using server side control
- 3.3. Building and using Menus
- 3.4. Master Pages

Unit-IV :Ado.net and Database Oriented Application

4.1 Difference between ADO and ADO.NET

[8hrs]

4.2 Data Provider

4.3 DataSet, DataReader, DataAdapter

4.4. GridView Control

4.5. Select operation on Database.

Reference Books :

1. ASP.NET Black Book - Steven Holzner

2. Web Publishing - Monica D'Souza

3. ASP.NET - Complete Reference

B. Sc. – III [Computer Science] Semester VI

Course: Mobile Communication

Course Code: U-COS-650

Learning Objectives:

- Understand the cellular radio concepts such as frequency reuse, handoff and how interference between mobiles and base stations affects the capacity of cellular systems.
- Identify the technical aspects of wireless and mobile communications.
- Understand the information theoretical aspects of wireless channels and basic spread spectrum techniques in mobile wireless systems.
- Describe current and future cellular mobile communication systems.

Course Outcome:

- After completion of course student are able to:
- Understand the cellular radio concepts such as frequency reuse.
- Hand off and how interference between mobiles and base stations affects the capacity of cellular systems.
- Identify the technical aspects of wireless and mobile communications.
- Understand the information theoretical aspects (such as the capacity) of wireless channels and basic spread spectrum techniques in mobile wireless systems.

Unit I: Introduction

- 1.1 Application [10hrs]
- 1.2 A Short History Of wireless Communication
- 1.3 A Market For Mobile Communication
- 1.4 Some Open Research Topic
- 1.5 A Simplified reference Model

Unit II: Introduction to Cellular Mobile Systems

- 2.1 Introduction [12hrs]
- 2.2 Basic Cellular System
- 2.3 Performance Criteria
- 2.4 Operation of Cellular System, Planning a Cellular System
- 2.5 Analog Cellular System

Unit III: Medium access control and Telecommunication System

- 3.1 Motivation for specialized MAC [15hrs]
- 3.2 SDMA
- 3.3 FDMA
- 3.4 TDMA
- 3.5 CDMA

- 3.6 GSM
- 3.7 Mobile services
- 3.8 System architecture
- 3.9 Radio interface
- 3.10 DECT
- 3.11 System architecture
- 3.12 Protocol architecture
- 3.13 TETRA
- 3.14 UMTS and IMT-2000

Unit IV: Wireless LAN

- 4.1 Infra red Vs radio transmission [8hrs]
- 4.2 Infrastructure and along Network
- 4.3 IEEE 802.11, HIPERLAN, Bluetooth

Reference Books:

1. Mobile Communications Second Edition – By Jochen Schiller (Pearson Education)
2. Mobile Cellular Telecommunications Second Edition-ByWilliam C.Y.Lee (Mc-Graw-Hill)
3. The Mobile Communication Handbook , IEEE Press- Jerry D. Gibson,

B. Sc. – III [Computer Science] Semester VI

Course: Lab Course-IX

Course Code: U-COS-651

LEARNING OBJECTIVES:

- Configure an asp.net application.
- Creating ASP.Net applications using standard .net controls.
- Develop a data driven web application.
- Connecting to data sources and managing them.
- Maintain session and controls related information for user used in multiuser web applications

COURSE OUTCOMES:

- Students will be able to design web applications using ASP.NET
- Students will be able to use ASP.NET controls in web applications
- Students will be able to debug and deploy ASP.NET web applications
- Students will be able to create database driven ASP.NET web applications and web services

Practical List

1. Program to demonstrate how to create html home page
2. Program to demonstrate implementing CSS
3. Program to demonstrate simple how to create Asp.net home page
4. Program to demonstrate Html controls(label, button textbox)
5. Program to demonstrate server side controls(label, button textbox)
6. Program to demonstrate Calendar control.
7. Program to demonstrate Master page
8. Program to demonstrate different validation controls
9. Program to demonstrate session and Query string
10. Program to demonstrate building simple web application.

B. Sc. – III [Computer Science] Semester VI

Course: Lab Course-X

Course Code: U-COS-652

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| <ol style="list-style-type: none">1. Group of two or three students should develop one mini project. |
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