

SAURASHTRA UNIVERSITY

RAJKOT – INDIA



CURRICULAM

FOR

P.G.D.C.A.

(1 Years Full Time: 2 Semester Programme)

Post Graduate Diploma In Computer Science And Application

(Semester I and Semester II)

Effective From June – 2009

Post Graduate Diploma in Computer Application
(Semester – I and Semester - II)
Saurashtra University
Effective from June - 2009

POST GRADUATE DIPLOMA IN COMPUTER SCIENCE AND APPLICATIONS
(PGDCA)
(1 year full time : 2 Semester Programme)

- O.P.G.D.C.A. 1** Candidate seeking admission to the Post Graduate Diploma In Computer Science And Application must have a Bachelor degree of minimum three years duration or equivalent from any recognized university.
- O.P.G.D.C.A. 2** The duration of the course will be full time one academic year. The examination for the post graduate diploma in computer science and applications will be conducted under the semester system. For this purpose, the academic year will be delivered into two semesters. No candidate will allowed to join any other course simultaneously.
- O.P.G.D.C.A. 3** No candidates will be admitted to any semester examination for PGDCA unless it is certified by the head, computer center that he has attended courses of study to the satisfaction of the head of the institute recognized for teaching courses of study in post graduate diploma in computer science and applications.
- O.P.G.D.C.A. 4** Candidate desirous of appearing the post graduate diploma in computer science and applications must forward their applications in the prescribed form to the registrar, through the head of institute on or before the date prescribed for the purposes under the relevant ordinance.
- R.P.G.D.C.A. 1** A candidate fails in any number of subjects in the first semester examination will be permitted to continue his studies at a subsequent semester
- R.P.G.D.C.A. 2**
- A. To pass any, semester examination, a candidate must obtain
in each course to Theory / Practical at least 40% marks.
 - B. Award of Classes:
 - 1. The obtained marks in a semester will be carry forwarded.
 - 2. The class of award will be in final semester based on obtained marks in all the semesters.
 - 3. A candidate securing at least 50% or more but less than 60% marks in the aggregate of all the courses of the first and second semesters will be placed in the **second class**.

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4. A candidate securing 60% or more but less than 70% marks in the aggregate of all the Courses of the first and second will be placed in the **first class**.
5. Those of the successful candidates in the first class securing 70% or more marks will be declared to have passed the examination in the **first class with distinction**.

R.P.G.D.C.A. 3 The following is the syllabuses in the various courses to be studied for the Post-graduate Diploma in Computer Science and Applications.

| P.G.D.C.A. (Semester – I) | | | |
|----------------------------------|---|-------------------------------------|----------------------------------|
| SR.NO. | SUBJECT | NO. OF THEORY LECT. PER WEEK | NO. OF PRACTICAL PER WEEK |
| 1 | CS – 1 Computer Fundamentals & Networking | 6 | - |
| 2 | CS – 2 Programming In C | 6 | 3 |
| 3 | CS – 3 Programming in Visual Basic | 6 | 3 |
| 4 | CS – 4 Web scripting Languages | 6 | 3 |
| 5 | CS – 5 Practical Based on CS-2,CS-4 | - | - |
| 6 | CS – 6 Practical Based on CS-3 | - | - |

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| CS – 1 : COMPUTER FUNDAMENTALS AND NETWORKING | | | | |
|--|---|---|--------------|-------------------|
| No | Topic | Detail | Marks | Min. Lect. |
| 1 | Computer Basics | Definition of computer Block Diagram Of Computer Characteristics of computer Generations of computer Analog computer Digital computer Mini, Micro, Mainframe, Super Hybrid computer | 10 | 7 |
| 2 | Number Systems And Binary Arithmetic | Conversions (Only For Integer) Decimal to Binary, Octal, Hexadecimal Binary to Decimal, Octal, Hexadecimal Octal to Decimal, Binary, Hexadecimal Hexadecimal to Decimal, Binary, Octal Complement 1's complement 2's complement Addition of two binary numbers Subtraction of two binary numbers using 1's and 2's complement method | 10 | 13 |
| 3 | Computer Peripherals | Input Devices Touch screen, OCR, OMR, MICR, OBR, Light pen Output Devices CRT, daisy wheel printer, dot matrix printer, drum printer, ink jet printer, laser printer Primary storage devices RAM, ROM, PROM, EPROM, EEPROM Secondary storage devices Magnetic Tape, Magnetic Disk, CDs, DVDs , Blu-Ray Disk, Pen drive | 20 | 12 |
| 4 | Overview of Computer Languages And Operating System | Machine level language Assembly level language High-level language Definition of assembler Compiler and interpreter Definition of Operating System | 10 | 8 |

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| | | | | |
|---|--|---|------------|-----------|
| | | Concept of Batch OS, Multiprogrammed OS, Time Sharing OS, On-Line OS And Real Time OS | | |
| 5 | Emerging Technology | GIS GPS Remote Sensing Blue tooth Wi-Fi | 10 | 5 |
| 6 | Network Introduction | Network Concept Network Services File Service, Print Service, Communication Service, Data Base Service, Security Service Application Service LAN, MAN, WAN Network Model Peer to Peer, Client - Server Network Topologies Bus, Ring, Star, Mesh | 10 | 8 |
| 7 | Transmissi on Media | Transmission Cable Co-Axial Cable, Twisted Pair Cable, Fiber Optic Cable Wireless Transmission Media Infrared, Laser, Radio, Microwave | 10 | 8 |
| 8 | Connectivit y Devices & Protocol | Devices Modems, Repeater, Hub, Bridge, Router, Gateway Protocols TCP, IP, UDP, SMTP, FTP, HTTP | 10 | 6 |
| 9 | Managing Network | N/W administrative models Work group, Binary based, Domain, Directory Services Managing User Accounts & group Security on window OS | 10 | 8 |
| | | | 100 | 75 |

Students seminar - 5 Lectures.
Expert Talk - 5 Lectures
Students Test - 5 Lectures.

Total No of Lectures : 75+ 15 = 90 Lectures.

Reference Books:

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1. Computer Fundamentals – By P.K.Sinha
2. Fundamental of IT for BCA – By S.Jaiswal
3. Engineering Physics – By V.K.Gaur
4. Electronics Communication – By Robert J. Schoenbeck
(Modulation And Transmission) : Charles E. Merrill Universal Book Stall
New Delhi
5. Teach Yourself Assembler – By Goodwin
6. Computer Networks Dr. N.N. Jani
7. Networking Essential Glenn Berg Tech. Media

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| CS – 2 : PROGRAMMING IN C (Total Marks = 100) | | | |
|--|----------------------------|---|-------------------|
| No | Topic | Detail | Min. Lect. |
| 1 | GETTING STARTED WITH C | C Character Set Constants, Variables and Keywords in C Various Data Types Various Operators Hierarchy of operations | 10 |
| 2 | VARIOUS CONTROL STRUCTURES | Decision <ul style="list-style-type: none"> ○ if, if-else, Nested if-elses, if-elseif Logical Operators Conditional (Ternary) operator Loops <ul style="list-style-type: none"> ○ for ○ while ○ do-while ○ Nesting of loops ○ Break ○ Continue ○ switch case goto | 10 |
| 3 | UDF | Need of UDF Void type Different types of functions <ul style="list-style-type: none"> ○ With argument and with return type ○ Without argument and with return type ○ Without argument and without return type Scope of variables Recursion Pointers Call by value and Call by reference | 10 |
| 4 | ARRAYS | Concept Initialisation and working with array Passing array elements to function Passing an entire array to function Arrays Array of pointers | 10 |

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| | | | |
|---|---------------|--|-----------|
| 5 | STRINGS | Concept String functions strlen() strcpy() strcat() strcmp() Gets(), puts() | 10 |
| 6 | STRUCTURE | How to define a structure Accessing structure elements Memory Allocation Array of structure Array within structure Pointer to Structure Union | 10 |
| 7 | FILE HANDLING | Opening and Closing of file fopen(),fclose() Reading and writing records into file fscanf(),fprintf(),ftell(),feof(),fseek(),fgetc(),fputc() | 10 |
| 8 | MISC. | Type casting Typedef Symbolic Constants C Preprocessor <ul style="list-style-type: none"> o #define o #include Command Line Arguments | 5 |
| | | | 75 |

Students seminar - 5 Lectures.
 Expert Talk - 5 Lectures
 Students Test - 5 Lectures.

Total No of Lectures : 75 + 15 = 90 Lectures.

Reference book:

1. **Programming in ANSI C** E. Balaguruswami
2. **Let Us C** Yashwant Kanetkar
3. **Working with C** Yashwant Kanetkar
4. **Programming in C** Schaum Series publication

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| CS – 03: Developing Application in Visual Basic 6.0 | | | | |
|--|--|---|--------------|-------------------|
| No | Topic | Detail | Marks | App. Lect. |
| 1 | Introduction | OOP Concepts VB as Event Driven Programming Property, Event and Method VB as IDE Controls Text Box, Label Command Button, Option Button Check Box, Frame Horizontal-Vertical Scroll Bar, Combo Box List Box, Timer, Shape Line, Drive List Box Directory List Box, File List Box Picture Box, Image Box Advance Controls Common Dialog Control Rich Text Box MSFlex Grid Use of MsgBox() and InputBox() | 30 | 20 |
| 2 | Variable, Operators, Constants, Decision Making, Looping and Array | Data Types Declaration of Variables Scope & Life Time of Variables (Local Variable, Form Variable Module Variable, Global Variable) Arithmetic & Relations Operators Decision Making using If & Select Case Loops using For, While..Wend, While Loop...End Loop, Do Loop..While, Do Until ...Loop Defining Array 1D, 2D, 3D Static & Dynamic Array | 15 | 15 |

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| | | | | |
|---|-----------------------------|--|----|----|
| | | Control Array | | |
| 3 | Multiple Forms, MDI | Using Multiple Forms Model Form & Modeless Form Parent & Child Form Concept using MDI Form Difference of MDI & SDI | 5 | 5 |
| 4 | Procedure, Functions, Menus | Creating Procedures & Functions Concept of ByRef & ByVal Concept of Public & Private Scope Use of Menu Editor | 5 | 5 |
| 5 | Library Functions | Functions Abs(),Array(),Asc() Choose(), Chr() Date(),DateAdd(),DateDiff(), DatePart(),DateSerial(),Day() Format(),FormatCurrency() FormatDateTime(), FormatNumber(), FormatPercent() IIf(),InStr(),InStrRev() IsArray(),IsDate(),IsNull(), IsNumeric() Join() LCase(),Left(),Len(), LoadPicture(),LTrim(),RTrim() Trim() Mid(),Month(),MonthName() Now() QBColor() Replace(),RGB(),Right(),Rnd() Space(),Split(),Sqr(),Str(), StrComp(),String(),StrReverse() Time() UCase() Val() WeekDay(),WeekDayName() Year() | 10 | 10 |

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| | | | | |
|---|----------------------|---|-----|----|
| 6 | File Handling | Sequential File Handling in VB | 5 | 2 |
| 7 | DataBase Programming | Introduction to ADO Control Bounded Connectivity & Unbounded Connectivity Create Projects with facilities like Add, Delete, Edit, Search Using DataList, DataCombo and DataGrid Controls | 20 | 15 |
| 8 | Advance Concepts | Short Note on Concepts of ActiveX Control, ActiveX DLL, OLE, API | 10 | 3 |
| | | | 100 | 75 |

Students seminar - 5 Lectures.
Expert Talk - 5 Lectures
Students Test - 5 Lectures.

TOTAL LECTURES : 75+15=90

Reference Books :

- | | | |
|------------------------------------|------------------------|------------|
| 1. Pure V.B. | Dan Fox | Tech Media |
| 2. Mastering VB 6 | Evangelous Petroustoss | BPB |
| 3. VB Black Book | | |
| 4. Programming in Visual Basic 6.0 | Julia Bradley | TMH Pub |

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| CS-04: Web Scripting Language | | | | |
|--------------------------------------|----------------|---|--------------|-------------------|
| No. | Topic | Details | Marks | Min. Lect. |
| 1 | INTERNET & WWW | Internet Introduction How to connect to Internet? ISP WWW Definitions (www, web server, web client, website, web page, search engine) Applications (E-mail, Chat) | 10 | 8 |
| 2 | HTML | USE OF HTML DOCUMENT HTML DOCUMENT STRUCTURE VARIOUS HTML TAGS DOCUMENT TAG <HTML></HTML> <HEAD></HEAD> <BODY></BODY> <TITLE></TITLE> <!-- --> TEXT FORMATTING TAG <H1></H1> TO <H6></H6> <P></P> <PRE></PRE> <U></U> <I></I> <TT></TT> | 30 | 21 |

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| | | | | |
|---|------------|---|----|----|
| | | FORMS FORM INPUT SELECT OPTION TEXTAREA | | |
| 3 | XHTML | Introduction Why XHTML? HTML v/s XHTML XHTML syntax | 5 | 4 |
| 4 | CSS | Introduction of Style sheet Types of Style sheet Class & ID CSS Font Property CSS Text Property CSS Background Property CSS Border Property CSS List Property CSS Padding Property CSS Margin Property | 15 | 12 |
| 5 | JavaScript | Introduction to JavaScript Operator Conditional Structure & Looping Structure Dialog Boxes Arrays User Define Function Built-in Functions <u>String :</u> charAt, concat, indexOf, lastIndexOf, replace, search, substr, substring, toLowerCase, toUpperCase <u>Math :</u> abs, ceil, floor, pow, random round, max, min <u>Date :</u> date, getDate, getDay, getMonth, getFullYear, getHours, getMinutes, getSeconds, getMilliseconds, setDate, setDay, setMonth, setYear, setFullYear, | 25 | 18 |

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| | | | | |
|----------------|-----|---|-----|----|
| | | setHours, setMinutes, setSeconds <u>Array :</u> Join, reverse, pop, push, shift, sort User Define Object Document Object History Object Navigator Object Form Object & Elements Events: onclick, ondblclick, onblur, onfocus, onchange, onkeypress, onkeydown, onkeyup, onMousemove, onMouseout, onsubmit, onreset, onselect, onload, onunload, timer event | | |
| 6 | XML | Introduction Elements & Attributes Validation & Validator XML Parser XML DOM XML to HTML XML Http Request | 15 | 12 |
| TOTAL : | | | 100 | 75 |

Students seminar - 5 Lectures.
 Expert Talk - 5 Lectures
 Students Test - 5 Lectures.

TOTAL LECTURES : 75+15=90

Reference Books:

1. Pure JavaScript
2. HTML, DHTML, JavaScript, Pearl & CGI
3. XML A Beginner's Guide – Dave Mercer – OSBORNE
4. Complete Reference XML – TMH
5. Complete Reference Internet - TMH

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| CS – 05: PRACTICALS | | |
|----------------------------|-----------------|---|
| Sessions | Topics | Marks |
| I | ○ CS – 2,CS – 4 | 80 (Practical) + 20 (Assingment) |

| CS – 06: PRACTICALS | | |
|----------------------------|---------------|--|
| Sessions | Topics | Marks |
| I | ○ CS – 3 | 80 (Practical) + 20 (Assingment) |

Note: Each session is of 3 hours for the purpose of Practical Examination

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| P.G.D.C.A. (Semester – II) | | | |
|-----------------------------------|--|-------------------------------------|----------------------------------|
| SR.NO. | SUBJECT | NO. OF THEORY LECT. PER WEEK | NO. OF PRACTICAL PER WEEK |
| 1 | CS – 07 RDBMS Using Oracle | 6 | 3 |
| 2 | CS- 08 Web Based Application Development Using PHP | 6 | 3 |
| 3 | CS – 09 VB.NET Programming | 6 | 3 |
| 4 | CS – 10 Practical (based on CS-07 and CS-09) | - | - |
| 5 | CS – 11 Practical (based on CS-08) | - | - |
| 6 | CS-12 Project | - | 6 |

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| CS-07 : RDBMS USING ORACLE | | | |
|-----------------------------------|---|--|-------------------|
| No. | Topic | Detail | Min. Lect. |
| 1 | Introduction to RDBMS | <ul style="list-style-type: none"> - DBMS v/s RDBMS - Characteristics of RDBMS - E-R Diagrams and Types of Relationship - Justify Oracle as a RDBMS | 5 |
| 2 | SQL, SQL*Plus | <ul style="list-style-type: none"> - Introduction to SQL - SQL Commands and Datatypes - Introduction to SQL*Plus - SQL*Plus formatting commands - Operator and Expression - SQL v/s SQL*Plus | 10 |
| 3 | Managing Tables and Data | <ul style="list-style-type: none"> - Creating and Altering tables (Including constraints) - Data Manipulation Command like Insert, update, delete - SELECT statement with WHERE, GROUP BY and HAVING, ORDER BY, DISTINCT, Special operator like IN, ANY, ALL, BETWEEN, EXISTS, LIKE - Join, subquery, Built in functions | 10 |
| 4 | Other Database Objects | <ul style="list-style-type: none"> - View - Sequence - Synonyms, Database Links, Index | 5 |
| 5 | Data and Transaction Control Statements | <ul style="list-style-type: none"> - Grant, Revoke, Role, Creating Users - What is transaction? - Starting and Ending of Transaction - Commit, Rollback, Savepoint | 5 |
| 6 | Introduction to PL/SQL | <ul style="list-style-type: none"> - SQL v/s PL/SQL - PL/SQL Block Structure - Language construct of PL/SQL (Variables, Basic and Composite Data type, Conditions looping etc.) - %TYPE and %ROWTYPE - Using Cursor(Implicit, Explicit) | 15 |
| 7 | Advanced PL/SQL | <ul style="list-style-type: none"> - Creating and Using Procedure, Functions, Package, Triggers - Creating Objects, PL/SQL Tables, Nested Tables, Varrays etc... | 15 |

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| | | | |
|---|---------------------------|--|-----------|
| 8 | Oracle Database Structure | <ul style="list-style-type: none"> - Initialization Parameter - Control Files, Redo Log files - Data files - Tablespace(Create, Alter, Drop) - Oracle Blocks - Instance Architecture <ol style="list-style-type: none"> 1. Database Processes 2. Memory Structure. - Import, Export and SQL*Loader | 10 |
| | | | 75 |

Suggestion (Not part of syllabus): Introduction to Software Engineering related to project development. (Analysis, Documentation, Development Life cycle, Data Flow diagram etc.)

Students seminar - 5 Lectures.
 Expert Talk - 5 Lectures
 Students Test - 5 Lectures.

Total No of Lectures : 75 + 15 = 90 Lectures.

Reference Books:

| | |
|--|------------------|
| SQL,PL/SQL The programming Lang.Of Oracle | - Ivan Bayross |
| Using Oracle 8i | - Page, Hughes |
| Fundamental of Software Engineering | - Rajib Mall |
| Oracle 8i The Complete Reference | - George Koch |
| Software Engineering A Practitioner Approach | - Roger Pressman |

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| CS-08 : Website Development Using PHP | | | | |
|--|--------------|--|--------------|-------------------|
| No. | Topic | Details | Marks | Min. Lect. |
| 1 | PHP Basic | Introduction to PHP PHP configuration in IIS & Apache Web server PHP Variable Static & global variable GET & POST method PHP Operator Conditional Structure & Looping Structure Array User Define Function: - argument function - default arument - variable function - return function Variable Length Argument Function - func_num_args - func_get_arg, func_get_args Variable Function Gettype, settype, isset, unset, strval, floatval, intval, print_r String Function Chr, ord, strtolower, strtoupper, strlen, ltrim, rtrim trim, substr, strcmp, strcasecmp, stripslashes, strrpos, strstr, stristr, str_replace, strrev, echo, print Math Function Abs, ceil, floor, round, fmod, min, max, pow, sqrt, rand Date Function Date, getdate, setdate, Checkdate, time, mktime Array Function Count, list, in_array, current, next, previous, end, each, sort, rsort, assort, arsort, array_merge, array_reverse Miscellaneous Function define, constant, include, require, header, die | 25 | 20 |

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| | | | | |
|----------------|----------------|---|-----|----|
| | | File handling Function fopen, fread, fwrite, fclose, file_exists, is_readable, is_writable, fgets, fgetc, file, file_get_contents, file_putcontents, ftell, fseek, rewind, copy, unlink, rename, move_upload_file | | |
| 2 | PHP Components | PHP GD Library PHP Regular expression function Cookies Session Server variable Database Connectivity with MySQL (Using PhpMyAdmin) | 30 | 25 |
| 3 | Advance PHP | PHP with OOPS Class, constructor, inheritance, serialize objects PHP with XML XML introduction Simple XML functions PHP with AJAX AJAX introduction XMLHttpRequest AJAX with MySQL Database | 30 | 15 |
| 4 | Smarty | Smarty Introduction Variable: Variables assigned from PHP Variables loaded from config files Variable Modifiers: capitalize, lower, upper, truncate, count_characters, count_words, date_format, nl2br, replace Built in Function: config_load, foreach, foreachelse, include, if,elseif,else, section, sectionelse Custom Functions: assign, counter, cycle, eval, fetch, html_checkboxes, html_image, html_options, html_radios, html_select_date, html_select_time, html_table | 15 | 15 |
| TOTAL : | | | 100 | 75 |

Students seminar

- 5 Lectures

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Expert Talk - 5 Lectures
Students Test - 5 Lectures.

Total No of Lectures : 75 + 15 = 90 Lectures.

Reference Books:

8. Beginning PHP5
9. PHP Bible
10. Professional PHP5
11. PHP Manual

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| CS-09: VB.NET PROGRAMMING | | | |
|----------------------------------|------------------------------|---|--------------------|
| No. | Topics | Detail | Marks/ Lect |
| 1 | .NET Framework | MS .Net Platform Microsoft .NET and Windows DNA Microsoft .NET Architecture Hierarchy Features of the .NET platform Multilanguage Development, Platform and Processor independence Automatic memory management, Easy Deployment, Distributed Architecture, Interoperability with Unmanaged code, Security, Performance and Scalability Components of the .NET Architecture: MS .NET Runtime, Managed/Unmanaged Code, Intermediate Language, Common Type System, MS .NET Base class library(BCL), Assemblies, Metadata, Assemblies and Modules, Assembly Cache, Reflection, Just In Time Compilation, Grabage Collection | 15/15 |
| 2 | Introduction to VB .NET | Introduction to visual studio, Project basics, types of project in .NET IDE of VB.NET The Environment Editor tab, format tab, general tab, docking tab, visual development, event driven programming, properties, methods ,events | 15/10 |
| 3 | Visual Basic Language Basics | Basic Variables – Declaring variables, Data types of variables, Forcing variable declarations, Scope and lifetime of a variable, Arrays, Types of Array, Control Array, Collections, Subroutines, Functions, Passing variable, Number of argument, Optional argument, Return value from function Loop statement Decision statement Msgbox and Inputbox | 15/10 |
| 4 | Working with GUI | Working with Forms GUI Programming with Windows Form TextBox, Label, Linked Label, Button, ListBox, ComboBox, CheckBox, PictureBox, RadioButton, Panel, ScrollBar, Timer, ListView, TreeView, ToolBar, StatusBar OpenFileDialog, SaveFileDialog, FontDialog, ColorDialog, PrintDialog Designing Menu | 15/10 |

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| | | | |
|---|-------------------------|---|-----------|
| 5 | OOP And COM | Object oriented programming Class, Object, Properties, Methods, Events, Constructors, Inheritance, overloading, My base, My class keywords Access specifiers Public, private, protected Overview of OLE, Accessing win32 API from VB .NET, Interfacing with Office 97COM technology, Advantages of COM+, COM and .NET, Create User Control, Access COM components in .NET application | 15/10 |
| 6 | Database Programming | ADO .NET architecture Understanding connection object Building connection string Understanding command object Understanding DataReaders Understanding DataSets Understanding DataAdapters Understanding DataTables Understanding DataColumn Understanding DataRow Differences between DataReader Model and DataSet Model Understanding DataView Binding TextBoxes, CheckBoxes, ListBoxes, CheckListBoxes, DataGrids | 25/20 |
| | | | 75 |

Students seminar - 5 Lectures
Expert Talk - 5 Lectures
Students Test - 5 Lectures.

Total No of Lectures : 75 + 15 = 90 Lectures.

Reference Books:

1. VB .NET programming black book
2. Mastering VB .NET
3. Introduction to .NET framework
4. Microsoft ADO .NET

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| CS - 10: PRACTICALS | | |
|----------------------------|-------------------|--|
| Sessions | Topics | Marks |
| I | CS - 7 AND CS – 9 | 80 (Practical) + 20 (Assignment) |

| CS - 11: PRACTICALS | | |
|----------------------------|--------|--|
| Sessions | Topics | Marks |
| I | CS – 8 | 80 (Practical) + 20 (Assignment) |

Note: Each session is of 3 hours for the purpose of Practical Examination

| CS – 12: PROJECT VIVA | |
|--|---------------------|
| Project should be based on <ul style="list-style-type: none"> - DBMS – RDBMS – Oracle, MySQL - Programming/Scripting Language – C, VB, PHP, VB .NET | Marks 100 |

Note: At the time of Presentation of project and viva-voce examination, each student must have certified hard copy and soft copy of developed project.