Name of Program	**Post Graduate Diploma in Computer Application**
Abbreviation	**PGDCA**
Duration	**2 Years**
Eligibility Criteria	A graduate degree in any faculty are eligible to P.G Diploma in computer Application course.
Objective of Program	PGDCA programme is aimed towards building prospective career in the field of computer application. The programme is designed with the objective to provide knowledge and skills in the various aspects of computer applications and core programming. Students will also be trained in the latest trends of information technology.
Program Outcome	**PO1 : Fundamental Knowledge Enrichment** Program trains students with the core computer science and Information Technology (IT) knowledge domains. It also makes students capable of using core concepts in the conceptualization of domain specific application development. **PO2 : Critical Thinking Development** The program develops the skills of critical thinking, problem solving, evaluative learning of various techniques, and understanding the essence of the problem. **PO3 : Advanced Emerging Technology Awareness** The program trains students with the latest technologies that is being used in the industry. The continuous syllabi review adds value to the program for the outgoing students and make them ready to face challenging demands of the industry. **PO4 : Advanced Tools Usage** The program teaches the students to apply the advanced tools to solve real world problems. **PO5 : Nurturing Project Planning and Management Capabilities** The program trains students for designing and conceptualizing the software architecture, planning and managing the product development process of complex and live software projects. It also makes students understand the decision making for selection of an appropriate project management capabilities. **PO6 : Real World Problem / Project Development** Real world project provides the candidates exposure to work in the challenging and demanding environment of the industry. The project development training makes students employable and industry ready. **PO7 : Team Work and Leadership Development** Trains students to work in a team and also to take leadership of the of the project management team.
Program Specific Outcomes	PSO1 : Develop and strengthen the fundamental core concepts that are required to solve practical problems PSO2 : Develop the professional skills that needs independent logical and analytical thinking, teamwork and leadership PSO3 : Nurture the students to investigate for the design and development of a workable solution for real-world desktop based applications. PSO4 : Train students for self-learning and performing challenging problem solution PSO5 : Train students to use recent desktop application and web designing tools

	PSO6 : Inculcate the passion for continuous learning for making a successful professional career
Mapping between POs and PSOs	

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
PO1						
PO2						
PO3						
PO4						
PO5						
PO6						
PO7						

Medium of Instruction	English
Program Structure	Semester 1

Paper	Title	Teaching		Credits	University Exam		Internal Marks	Total
		Theory (Hrs)	Practical (Hrs)		Duration	Marks		
101	Fundamentals of Computers and Introduction to Information Technology	4	0	4	3 Hrs.	70	30	100
102	Database Management Systems	4	0	4	3 Hrs.	70	30	100
103	Fundamentals of C programming	4	0	4	3 Hrs.	70	30	100
104	GUI Programming – 1	4	0	4	3 Hrs.	70	30	100
105	Office Automation Tools	4	0	4	3 Hrs.	70	30	100
106	Practical – I	0	4	4	2 Hrs.	70	30	100
107	Practical – II	0	3	3	2 Hrs.	70	30	100
108	Practical – III	0	3	3	2 Hrs.	70	30	100
		20	10	30		560	240	800

Program Structure	Semester 2

Paper	Title	Teaching		Credits	University Exam		Internal Marks	Total
		Theory (Hrs)	Practical (Hrs)		Duration	Marks		
201	GUI Programming – II	4	0	4	3 Hrs.	70	30	100
202	Web Designing tools	4	0	4	3 Hrs.	70	30	100
203	Network Essentials andE-Commerce	4	0	4	3 Hrs.	70	30	100
204	Basics of Accounts and Accounting Packages	4	0	4	3 Hrs.	70	30	100
205	Practical – IV	0	4	3	2 Hrs.	70	30	100
206	Practical – V	0	4	3	2 Hrs.	70	30	100
207	Project	0	--	8	--	200	--	200
		16	8	30		620	180	800

Course: 101: Fundamentals of Computers and Introduction to Information Technology

Course Code	101
Course Title	Fundamentals of computers and introduction to Information Technology
Credit	4
Teaching per Week	4 Hrs
Minimum weeks per Semester	15 (Including Class work, examination, preparation, holidays etc.)
Review / Revision	June 2015
Purpose of Course	This course helps students to understand fundamentals of computer. The course also gives students an idea about various components of computer hardware and its working. The course also briefs the concepts of various operating systems. Students will also be able to learn about Internet and popular internet services like e-mail.
Course Objective	1. To make students understand computer hardware fundamentals 2. To make students understand various components of computer and their working 3. To make students understand the importance and use of operating systems. 4. To make students understand about Internet and internet services
Course Outcomes	CO1: Explain students about how computer works and the importance of various components of computers CO2: Understanding the secondary storage devices like HDD, CD, DVD, Bluray and other portable devices CO3: To provide students a foundation of the importance and use of operating systems. CO4: Explain and train students to use GUI OS, Windows component, files and folder and control panel CO5: Explain and train students to utilize Internet, Email and search engine
Mapping between COs with PSOs	
Pre-requisite	Nil

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	■					■
CO2	■					■
CO3	■			■		■
CO4	■	■	■	■		■
CO5	■	■	■	■	■	■

Course Content	UNIT 1: Basic Computer Organization 1.1. Hardware parts of Computer 1.2. Block diagram of Computer 1.3. I/O devices: Keyboards, Monitors, Pointing Devices, Scanners, OMR, OCR, Printers 1.4. Primary Storage: RAM, ROM (and its types), Cache Memory, Virtual Memory 1.5 Ports: Serial, Parallel, PS2, USB 1.6 Basic Troubleshooting UNIT 2: Secondary Storage 2.1 Electro-Magnetic storage devices: FDD, HDD 2.2 Optical storage devices: CD, DVD, Bluray 2.3 Other portable storage devices UNIT 3: Operating System Concepts 3.1 History and Evolution of OS 3.2 Need of OS 3.3 Single-user & Multi-user OS 3.4 Elements and Functions of OS 3.5 File System (e.g. FAT, NTFS etc.) 3.6 Common Files types (e.g. jpg, doc, txt, pdf etc.) 3.7 BIOS, POST Operation

	UNIT 4: Introduction to GUI OS 4.1 Introduction to Windows and Windows User Interface 4.2 Windows versions, Wizard 4.3 Windows Components like Desktop, Start menu, My Computer, Recycle Bin, Notepad, Icons, Dialog Boxes & Toolbars etc. 4.4 Working with Files & Folders: File and Directory management, create, copy, delete, move files, Shortcuts, Types of files, File attributes, Windows Explorer 4.5 Setting Environment using Control Panel – Date & Time, Display, System, Printers, Audio, Network, Fonts, Users, Installing and uninstalling new Hardware & Software on your computer etc. 4.6 Searching Files, Computers UNIT 5: Introduction to Internet & E-mail 5.1 What is Internet? 5.2 Web Browsers and URL 5.3 Internet Settings, Browser Settings 5.4 Web Services like www, ftp, e-mail, chat, search engine etc. 5.5 Concept of Telnet, Remote Desktop 5.6 Basics of E-mail 5.6.1 What is an Electronic Mail? 5.6.2 Email Addressing 5.6.3 Mailbox: Inbox and Outbox 5.6.4 Composing and sending a new E-mail 5.6.5 Replying, Forwarding an E-mail message 5.6.6 Sorting and Searching emails 5.6.7 Mail Attachments 5.6.8 Using Address book 5.6.9 Handling SPAM 5.6.10 E-mail protocols like POP3, SMTP 5.6.11 Difference between Offline Mail Client (Outlook) and Browser based E-mail services
Reference Books	1. Fundamentals of Computers – E Balagurusamy, McGrawHill 2. Fundamentals of Computer – V. RajaRaman 3. How Computers work - Ron White – Techmedia 4. How Internet work – Ron White - Techmedia 5. Introduction to computers - Peter Norton – TMH 6. Inside IBM PC - Peter Norton - PHI 7. Operating Systems - Stallings – PHI 8. Windows XP – Complete Reference, BPB
Teaching Methodology	Class work, Discussion, Self Study, Seminars and/or Assignment
Evaluation Method	30 % internal assessment and 70% external assessment

Course: 102: Database Management Systems

Course Code	102
Course Title	Database Management Systems
Credit	4
Teaching per Week	4 Hrs
Minimum weeks per Semester	15 (Including Class work, examination, preparation, holidays etc.)
Review / Revision	June 2015
Purpose of Course	This course is an introduction of the concept of database management Systems. The course gives the knowledge about structure and use of various database management systems with major focus on relational database design.
Course Objective	1. To make student understand basic concepts of Database management systems, especially relational database. 2. To make student able to design good database design with implementation of various constrains. 3. To make student effectively using database for storing, managingand retrieving data from DBMS like MS-ACCESS, MySQL, Oracle and DB2 via SQL statements.
Course Objective	CO1: Introduce and explain Basics of Database , Database Management System, Various pros and cons of manual system and database system, Relational database and its applications. CO2: Train students to apply various constraints on database and to store and retrieve data easily. CO3: Explain and train students to deal with inconsistency of the database, removing various database anomalies using normalization approach. CO4: Train students to work with DBMS like MS-ACCESS, MySQL, Oracle and DB2 via SQL Interface
Mapping between COs with PSOs	
Pre-requisite	NIL

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	■					
CO2		■	■			
CO3		■	■			
CO4		■	■	■		

Course Content	Unit 1: Basic Concepts of Database Management System 1.1 Fundamental concepts of File and databases 1.2 Purpose of database system 1.3 Structure of relational database – instance, schema, record,fields Unit 2: Relational Database Design 2.1 Integrity Constraints: 2.1.1 Concepts of Key: super key, candidate key, primary key,unique key 2.1.2 Data Constraints - Applying Data constraints, Types ofData constraints - I/O, Primary, Foreign and Unique 2.1.4 Business Rule Constraint - Column & Table level, NULL &NOT NULL 2.1.5 CHECK constraint 2.1.6 Default value concepts 2.2 Referential Integrity Constraints (foreign key) UNIT 3: Normalization 3.1 Functional Dependencies 3.2 Need for Normalization 3.3 Normalization using functional dependencies - upto 3NF Unit 4: SQL statements - DDL (MS-Access, MySql, Oracle or DB2) 4.1 Working with databases and tables. 4.2 Various types of data, conventions and terminology 4.3 DDL statements- CREATE TABLE,ALTER TABLE,DROP TABLE Unit 5: SQL statements – DML (MS-Access, MySql, Oracle or DB2) 5.1 DML statements- INSERT, UPDATE, DELETE, TRUNCATE 5.2 SELECT statement 5.2.2 Clauses of SELECT statements 5.2.2 group functions and Built-in functions 5.2.3Querying multiple tables using join

Reference Books	1. Database System Concepts – SILBERSCHATZ, KORTH, SUDARSHAN-McGraw-Hill 2. An introduction to Database Systems- C.J.DATE – Addison Wesley 3. Database System: A practical approach to design implementation and management – THOMAS CONNOLLY, CAROLYN BEGG, Pearson Education 4. Access - The Complete Reference – Virginia Andersen – McGraw-Hill 5. Access Database Design & Programming – Steven Roman - O' Reilly 6. Microsoft Access: Bible – Cary N. Prague 7. MySQL in a Nutshell, Russell Dyer, O'Reilly 8. SQL & PL/SQL Programming Language of Oracle – IVAN BAYROSS
Teaching Methodology	Class work, Discussion, Self Study, Seminars and/or Assignment
Evaluation Method	30 % internal assessment and 70% external assessment

Course: 103: Fundamentals of 'C' programming

Course Code	103
Course Title	Fundamentals of 'C' programming
Credit	4
Teaching per Week	4 Hrs
Minimum weeks per Semester	15 (Including Class work, examination, preparation, holidays etc.)
Review / Revision	June 2015
Purpose of Course	The course is for the introduction of fundamental of Computer Programming & Programming Methodology using 'C' language. Students will become familiar with algorithm development and problem solving techniques using structured programming.
Course Objective	1. To explain the concept of Computer Programming Methodology 2. To make student understand fundamental concepts of structured programming language and constructs of 'C' language.
Course Outcome	CO1 : Students will be trained to write algorithm and draw flowcharts for solving complex computer programs. CO2 : Students will be able to understand the fundamentals of programming language like Variables, Scope of variables and also the storage classes (How and where the value of the variable will be saved?) CO3 : Students will be able to understand the basics of programming language such as operators, datatypes, control structures etc. CO4 : Students will be able to write user defined functions to write complex code in more simpler way and also understands the reusability of code.
Mapping between COs with PSOs	
Pre-requisite	3. NIL

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	■		■	■		■
CO2	■	■				
CO3	■		■		■	
CO4	■	■	■			

Course Content	UNIT 1: Programming Languages 1.1 Algorithm and Flowchart 1.2 Concepts of Compiler / Interpreter UNIT 2: Constraints & Variables 2.1 Character Set 2.2 Constants 2.3 Variables 2.4 Storage Classes 2.5 Scope of Variables UNIT 3: Operators & Functions 3.1 Operators: Assignment, Arithmetic, Increment, Decrement, Relational, Logical, Conditional 3.2 Expression 3.3 Evaluation & Assignment of Expression 3.4 Functions 3.4.1 Basic Input & Output Functions 3.4.2 Built-in Functions - Mathematical and String Functions UNIT 4: Jumping, Branching & Looping Statements UNIT 5: Array and Structure 5.1 Array – Meaning and Usages 5.2 One Dimensional Arrays 5.3 Two Dimensional Array 5.4 Structure – Meaning and Usages
Reference Books	1. Programming in C - Balaguruswami - TMH 2. C Programming Language - Kernigham & Ritchie - TMH 3. Programming in C - Stephan Kochan – CBS 4.

	4. C Language Programming - Byron Gottfried –TMH 5. Let us C – Yashwant Kanetkar - BPB Publication 6. Structured programming concepts - La Budde - (Mc.Graw Hlll)
Teaching Methodology	Class work, Discussion, Self Study, Seminars and/or Assignment
Evaluation Method	30 % internal assessment and 70% external assessment

Course: 104: GUI Programming – I

Course Code	104
Course Title	GUI Programming – I
Credit	4
Teaching per Week	4 Hrs
Minimum weeks per Semester	15 (Including Class work, examination, preparation, holidays etc.)
Review / Revision	June 2015
Purpose of Course	This course is an introduction of Graphical User Interface to students. The course also gives students an idea about various components .NET architecture, Visual Studio and also explains the working of it.
Course Objective	1. To make student understand GUI programming 2. To make student understand various Controls and their use.
Course Outcome	CO1: Introduce and explain various basic components of Microsoft.NET frame work and VB.NET Language. CO2: Explain students about various programming fundamentals and VB.Net components which help them to work with basic .NET Programs. CO3: Train students to work with windows forms and various .NET tools that helps to create windows based application in VB.Net CO4: Explain and train students to work with various Container controls, Various Dialog Boxes and Types of Menu controls of VB.NET. CO5: Train students to work with integration of Database and .NET application using ADO.Net that fulfill the basic requirements to create a project.
Mapping between COs with PSOs	
Pre-requisite	NIL

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1						
CO2						
CO3						
CO4						
CO5						

Course Content	UNIT 1: Introduction to Microsoft .NET 1.1 Microsoft .NET Framework architecture 1.2 Common Language Runtime 1.3 Common Type System 1.4 Microsoft Intermediate Language Assemblies 1.5 Namespaces 1.6 class libraries UNIT 2: The VB.NET Language 2.1 Data Type, Variables 2.2 Constants 2.3 Arrays 2.4 Control Array 2.5 Collections 2.6 Subroutines 2.7 Functions 2.8 Control Flow statements 2.9 Messagebox and Inputbox. UNIT 3: Working with Win Forms 3.1 Form Lifecycle 3.2 Textbox, Label 3.3 Button 3.4 Listbox 3.5 Combobox 3.6 Checkbox 3.7 PictureBox 3.8 RadioButton 3.9 Link Label 3.10 Panel

	3.11 Scroll bar 3.12 Timer 3.13 ListView 3.14 TreeView 3.15 Toolbar 3.16 StatusBar UNIT 4: Containers, Dialog Boxes and Menus 4.1 Containers: Flow layout panel, Group box, Panel, Split container, Tab control, Table layout panel 4.2 Dialog Boxes: OpenFileDilog, SaveFileDialog, FontDialog, ColorDialog, PrintDialog 4.3 Menus UNIT 5: Introduction to Database 5.1 ADO.NET Architecture 5.2 Using the BindingSource
Reference Books	1. Visual Basic .NET Programming – Black Book: Stevan Holzner - Dreamtech Press 2. Introduction to .NET framework -Worx publication 3. The Complete Reference – Visual Basic .NET : Jeffrey Shapiro - TMH 4. Visual Basic .NET Programming (Black Book) - By Steven Son Holzner , DreamTech Publication 5. Mastering Visual Basic.NET by Evangelos Petroutsos BPB Publication 6. Moving to VB.NET : Stategies, Concepts, and Code - by Dan Appleman – Apress Publication 7. Microsoft Visual Basic .NET Step by Step - by Michael Halvorson, PHI Publication 8. .NET – Complete Development Cycle - by G. Lenz, T. Moeller, Pearson Education 9. Professional VB.NET, 2nd Edition - by Fred Barwell, et al – Wrox Publication
Teaching Methodology	Class work, Discussion, Self Study, Seminars and/or Assignment
Evaluation Method	30 % internal assessment and 70% external assessment

Course: 105: Office Automation Tools

Course Code	105
Course Title	Office Automation Tools
Credit	4
Teaching per Week	4 Hrs
Minimum weeks per Semester	15 (Including Class work, examination, preparation, holidays etc.)
Review / Revision	June 2015
Purpose of Course	This course aims towards learning and use of office suite of applications namely word processing software, spreadsheet software and presentation software. The course also teaches students about various features of these software tools.
Course Objective	1.To make students learn and use Word processing software 2.To make students learn and use Spreadsheet application 3.To make students learn and use Presentation software
Course Outcome	CO1 : Explain fundamental aspects of the MS Office suite and it's advantages to the students CO2 : Train students about word processing such as formatting, tables, Macro, Mail Merge etc. using MS Word.. CO3 : Train students about concepts like data formatting, conditional formatting, chats etc. using MS Excel. CO4 : Explain and train students about Professional Presentation with various tools like Animation, adding graphics and sound using MS PowerPoint. CO5 : Expose the students to the various data formatting, processing and presentation technology and real world use of it. CO6 : After studying the course, students will be able to work with office suite and also understand about the important features of word processing software, spreadsheet software and presentation software.
Mapping between COs with PSOs	
Pre-requisite	Nil

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	■					
CO2			■			
CO3	■	■	■		■	
CO4		■	■	■		■
CO5	■		■		■	■
CO6	■	■		■		

Course Content	UNIT 1: Introduction to Office Suite 1.1. Features and uses 1.2. Word-processing, Spreadsheet, Presentation, graphics UNIT 2: Word-processing 2.1. Working with Word-processing 2.2. Menus & Commands, Shortcut Menus, Toolbars 2.3. Templates, Creating a New Document 2.4. Document Views and layouts 2.5. Working with –Styles 2.6. Headers & Footers 2.7. Text, Paragraph, Page Formatting 2.8. Text Attributes, Text Editing, Text Enhancements 2.9. Bullets & Numbering: Bulleted, Numbered & Multilevel List 2.10. Format Painter and its use 2.11. Tabs & Indents 2.12. Auto formatting, Auto text, Autocorrect, Auto complete 2.13. Insert page numbers, symbols, images, files etc. 2.14. Insert Table of Contents, Footnote, Endnote, Citation, Cross Reference etc. 2.15. Find & Replace 2.16. Spell Check & Grammar, Thesaurus 2.17. Tables 2.17.1. Create Tables 2.17.2. Add, Delete, Insert, Merge Rows and Columns 2.17.3. Convert Text to Table and Table to Text 2.17.4. Borders and Shading 2.18. Margins & Space management in Document 2.19. Adding References and Graphics 2.20. Mail Merge 2.20.1. Letters, Envelopes, Mailing Labels

	2.21. Import and Export to/from other file formats 2.22. Printing & various print options UNIT 3. Spreadsheet 3.1. Concepts of Workbook & Worksheets 3.2. Using Wizards 3.3. Different Views of Worksheets 3.4. Using different features with Data, Cell and Text 3.5. Cell Markers 3.6. Working with Data & Ranges, Various Data Types, Name a range of cells 3.7. Cell Formatting, Conditional Formatting , Borders & Shading, Row Height, Column Width and other Format features 3.8. Addressing and its types (Absolute, Relative) 3.9. Series, Fill series of different types 3.10. Column & Row Freezing, Labels, Hiding, Splitting etc. 3.11. Inserting, Removing & Resizing of Columns & Rows 3.12. Functions and their categories like Recently Used, Financial, Logical, Text, Text, Date & Time, Lookup & Reference etc. 3.13. Use of Formulas, Calculations 3.14. Chart Wizard, Different Chart Types 3.15. Analyzing data 3.16. Creating Formats & Links 3.17. Organizing Data in A List 3.18. Sorting and Filtering data 3.19. Sharing & Importing Data 3.20. What-if analysis using Goal Seek, Scenario 3.21. Spelling, Thesaurus, Protect Sheet, Protect Workbook, Password protection 3.22. Page Layout and Page formatting 3.23. Printing of Workbook & Worksheets with various options UNIT 4: Presentation 4.1. Introduction & use, working with PowerPoint 4.2. Creating a presentation 4.3. Using Wizards 4.4. Slides & different types, 4.5. Inserting, Deleting and Copying of Slides 4.6. Working with Notes, Handouts, Columns & Lists 4.7. Adding Graphics, Sounds and Movies to a Slide 4.8. Working with PowerPoint Objects 4.9. Designing & Presentation of a Slide Show 4.10. Printing Presentations, Notes, Handouts with print options 4.11. Master Slide and other Masters 4.12. Slide Transition, Automating Presentation, applying effects Unit 5: Comparison of various office suites like MS- Office, Lotus-Office, Star-Office, Open-Office etc.
Reference Books	1. Microsoft Office 2013 Bible, Microsoft Press

	2. MS OFFICE XP COMPLETE BPB publication 3. The 2007 Microsoft Office System Inside Out, Microsoft Press 4. Mastering Word 97, Mansfield, Sybex Pub. 5. Mastering Excel 2010, Bill Jelen, BPB 6. Mastering Microsoft Office 97 – L.Moseley, D.Boody – BPB 7. Mastering Powerpoint 2000 – Murray K., BPB 8. The ABSs of Microsoft Office - Professional Edition by GuyHart – Davis, BPB Publication 9. The Essential Excel 97 Book - Faithe Wempen & Donna Ppayne, Galgotia Publication 10. MS Office Excel Step by Step, Curtis Frye, Microsoft Press
Teaching Methodology	Class work, Discussion, Self Study, Seminars and/or Assignment
Evaluation Method	30 % internal assessment and 70% external assessment

Course: 106: Practical-I

Course Code	106
Course Title	Practical-I
Credit	4
Teaching per Week	4 Hrs
Minimum weeks per Semester	15 (Including Practical work, examination, preparation, holidays etc.)
Review / Revision	June 2015
Purpose of Course	1. The course gives the practical knowledge about structure and use of various database management systems with major focus on relational database design. 2. Students will become familiar with problem solving techniques using 'C' language
Course Objective	1. To make students work practically on Structured Query Language 2. To get students acquainted practically with various DBMS 3. To make student understand fundamental concepts of structured programming language and constructs of "C' language.
Prerequisite	Nil
Course Outcome	After studying this course - 1. Students will be able to effectively work with DBMS like like MS-ACCESS, MySQL, Oracle and DB2 via SQL Interface. 2. Students will be able to write program for solutions to various problems using 'C' language
Course Content	Practical based on: Paper No. 102 (Database Management Systems) using Microsoft graphics & Paper No. 103 (Fundamentals of 'C' programming)
Reference Books	As per Paper No. 102 and Paper No. 103
Teaching Methodology	Lab. Work
Evaluation Method	30 % internal assessment and 70% external assessment

Course: 107: Practical-II

Course Code	107
Course Title	Practical-II
Credit	3
Teaching per Week	3 Hrs
Minimum weeks per Semester	15 (Including Practical work, examination, preparation, holidays etc.)
Review / Revision	June 2015
Purpose of Course	The course is an introduction of practical working with various components using .NET architecture and Visual Studio interface.
Course Objective	To make students practically work with Visual studio interface and .Net architecture using VB .net
Prerequisite	Nil
Course Outcome	After studying the course, students will be able to develop GUI application using basic controls of Visual Studio.
Course Content	Practical based on Paper No. 104 GUI Programming – I
Reference Books	As per Paper No. 104 GUI Programming – I
Teaching Methodology	Lab. Work
Evaluation Method	30 % internal assessment and 70% external assessment

Course: 108: Practical-III

Course Code	108
Course Title	Practical-III
Credit	3
Teaching per Week	3 Hrs
Minimum weeks per Semester	15 (Including Practical work, examination, preparation, holidays etc.)
Review / Revision	June 2015
Purpose of Course	This course aims towards learning and use of office suite of applications like word processing software, spreadsheet software and presentation software.
Course Objective	1. To make students learn and use Word processing software 2. To make students learn and use Spreadsheet application 3. To make students learn and use Presentation software
Prerequisite	Nil
Course Outcome	After studying the course, students will be able to work with office suite and also understand about the important features of word processing software, spreadsheet software and presentation software.
Course Content	Practical based on Paper No. 105 Office Automation Tools
Reference Books	As per Paper No. 105 Office Automation Tools
Teaching Methodology	Lab. Work
Evaluation Method	30 % internal assessment and 70% external assessment

Course: 201: GUI Programming - II

Course Code	201
Course Title	GUI Programming – II
Credit	4
Teaching per Week	4 Hrs
Minimum weeks per Semester	15 (Including Class work, examination, preparation, holidays etc.)
Review / Revision	June 2015
Purpose of Course	This course is advance of vb.net course. It is to make aware students in database related programs in vb.net.
Course Objective	1. To make student understand advance controls of vb.net 2. To make student understand MDI based programming 3. To make understand students database related programming
Course Outcome	CO1: Introduce and explain basics of Microsoft.NET and VB.NET Language, Types of menus , various windows tools and Exception handling methodology in detail. CO2: Explain students about Advanced GUI controls and train student to work with Multiple Document Interface , Web browser control and basics about configuration file . CO3: Train students to work with Multiple Document Interface that helps in project design and development. CO4: Explain and train students to deal with Connected and Disconnected Architecture of ADO .NET and data binding with grid view control. CO5: Train students to work with integration of Database system and .NET application that helps them to develop VB.NET project by using various database systems.
Mapping between COs with PSOs	
Pre-requisite	Understanding of .NET Framework

	PSO1	PSO2	PSO3	PSO4	PsSO5	PSO6
CO1						
CO2						
CO3						
CO4						
CO5						

Course Content	Unit : 1 : .Introduction 1.1 .NET Framework , CLR, Class Libraries 1.2 Toolbox controls 1.3 Creating Menus & Using Dialogboxes 1.4 Error Handling Unit 2 : Advance GUI Controls & MDI Programming 2.1 Treeview & Listview controls 2.2 Toolbar & Statusbar controls 2.2 Container & Split controls 2.4 MDI Application & MDI Child Handling 2.5 Webbrowser Control 2.6 Reading parameters from Config Files Unit : 3 : Ado.NET Introduction 3.1 Connected Architecture classes 3.2 Disconnected architecture 3.3 Reading & Writing XML 3.4 Database controls & binding Unit 4 : ADO.Net Programming 4.1 Writing database programs using ado.net Connection Class 4.2 Basic CRUD operation 4.3 DataGridView binding 4.4 Master Detail Form programming Unit 5 : Connecting to Various RDBMS using VB.Net 5.1 Programming with MySQL Database 5.2 Programming with SQLServer 5.3 Programming oledb databases like MS access etc. 5.4 Reading and manipulating image files
Reference Books	1. Visual Basic .NET Programming – Black Book: Stevan Holzner - Dreamtech Press

	2. Introduction to .NET framework -Worx publication 3. The Complete Reference – Visual Basic .NET : Jeffrey Shapiro - TMH 4. Visual Basic .NET Programming (Black Book) - By Steven Son Holzner , DreamTech Publication 5. Mastering Visual Basic.NET by Evangelos Petroutsos BPB Publication 6. Moving to VB.NET : Stategies, Concepts, and Code - by Dan Appleman – Apress Publication 7. Microsoft Visual Basic .NET Step by Step - by Michael Halvorson, PHI Publication 8. .NET – Complete Development Cycle - by G. Lenz, T. Moeller, Pearson Education 9. Professional VB.NET, 2nd Edition - by Fred Barwell, et al – Wrox Publication
Teaching Methodology	Class work, Discussion, Self Study, Seminars and/or Assignment
Evaluation Method	30 % internal assessment and 70% external assessment

Course: 202: Web Designing tools

Course Code	202
Course Title	Web Designing tools
Credit	4
Teaching per Week	4 Hrs
Minimum weeks per Semester	15 (Including Class work, examination, preparation, holidays etc.)
Review / Revision	June 2015
Purpose of Course	This course is an introduction of Web Designing concepts to students. The course also gives students an idea about various client side technologies like CSS and Javascript. It also gives idea about web page designing using Photoshop and Flash.
Course Objective	1. To make student understand Web Designing 2. To make student understand various concepts of Validation, designing and how to in-corporate those in web page,
Course Outcome	CO1 : Explain fundamental aspects of JavaScript and CSS. CO2 : Train students about concepts of Graphics Basic like various image type, Tolerance, Opacity , Types of Color etc. CO3 : Train students about Photoshop and it's various tools. CO4 : Explain and train students about How to make professional HTML,CSS based Static HTML websites and how to make different professional images for website using Photoshop. CO5 : Expose the students to the various Advance Photoshop techniques like Transformation, layers Channels and Filters. CO6 : After studying this course, students will be able to understand and create HTML web pages with multimedia.
Mapping between COs with PSOs	
Pre-requisite	HTML
Course Out come	After studying this course, students will be able to understand and create HTML web pages with multimedia. This course will also help students to understand how to validate user Input and how to apply common design on every web page.

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	■					
CO2			■	■		
CO3	■	■	■		■	
CO4		■	■	■		■
CO5	■		■		■	■
CO6	■	■		■	■	

Course Content	UNIT 1: JavaScript 1.1 Fundamentals of JavaScript 1.2 Syntax of JavaScript 1.3 Use of JavaScript in HTML 1.4 Validation using JavaScript UNIT 2: CSS 2.1 What is CSS? 2.2 Advantage & Disadvantage of CSS 2.3 Creating CSS 2.4 Use of CSS in HTML 2.5 Formatting HTML page using CSS UNIT 3: Graphics Basics 3.1 Bitmap vs. vector-based graphics 3.2 Color/bit depth and image resolution 3.3 Graphic file formats 3.4 Optimizing web graphic 3.5 Vector graphics vs. bitmap graphics 3.6 Regular text vs. anti-aliased text 3.7 Pixel resize vs. smart resize 3.8 Regular graphics vs. interlaced graphics 3.9 Lossy compression vs. lossless compression 3.10 Dithered graphics vs. non-dithered graphics 3.11 Tolerance 3.12 Opacity 3.13 Introduction to Color 3.13.1 Color modes- RGB, CMYK, grayscale, LAB, bitmap, 3.13.2 Color Adjustments- Hue, saturation, and brightness,

	Browser safe colors, Shadows, highlights and midtones of an image UNIT 4: Photoshop Environment 5.1 About Photoshop 5.2 The Photoshop Interface 5.3 Setting up a new Photoshop document 5.4 The Photoshop Toolbox and Options bar 5.5 Photoshop Image and Color Basics 4.5.1 Opening, Creating and Saving an Image in Photoshop 4.5.2 Basic image editing, Working with color in Photoshop 5.6 Photoshop Tools Tools - Marquees, Magic wand, Lassos,. Move tool, Crop tool, Slice tools, Pencil, Paintbrush, Eraser tools, History brushes, Gradient, Paint bucket, Burn-dodge-sponge, Blur-sharpen-smudge, Shapes-line-rectangle-polygon, Path selection tool, Pen tool, Background and foreground. 5.7 Transforms : Using free transform, move, Rotate, scale, Skew, Distort, Perspective, Flip 5.8 Photoshop Layers and Channels and Filters 5.8.1 Introduction to Layers 5.8.2 Layer modes and blending options 5.8.3 Image composting using layers 5.8.4 Introduction to Channels and Actions 5.8.5 Filters – Artistic, Blur , Noise etc. 5.8.6 Text editing and special effects UNIT 5: Introduction to Flash
Reference Books	1. HTML, DHTML, Java Script, Perl & CGI, Ivan Bayross BPB Publication. 2. Internet and Web Design, Ramesh Bangia ,New Age International 3. Web Design Technology, D.P. Nagpal, Paperback 4. Web Design: The Complete Reference, Thomas A. Powell,Paperback 5. Comprehensive Multimedia And Web Technology, Ramesh Bangia, Meenakshi Arora,Firewall Media 6. Photoshop CS5, In Easy Steps ,Paperback 7. Adobe Photoshop CC Bible, Lisa Danae Dayley and Brad Dayley 8. Exploring Adobe Flash CS6, Prof. Sham Tickoo , Supriya Mishra ,Paperback
Teaching Methodology	Class work, Discussion, Self Study, Seminars and/or Assignment
Evaluation Method	30 % internal assessment and 70% external assessment

Course: 203: Network Essentials and E-Commerce

<table>
<tr><td>Course Code</td><td>203</td></tr>
<tr><td>Course Title</td><td>Network Essentials and E-Commerce</td></tr>
<tr><td>Credit</td><td>4</td></tr>
<tr><td>Teaching per Week</td><td>4 Hrs</td></tr>
<tr><td>Minimum weeks per Semester</td><td>15 (Including Class work, examination, preparation, holidays etc.)</td></tr>
<tr><td>Review / Revision</td><td>June 2015</td></tr>
<tr><td>Purpose of Course</td><td>This course is an introduction to students to understand Computer Network concepts. The course also gives students an idea about the process of E-commerce and security concerns while using E-commerce in business management.</td></tr>
<tr><td>Course Objective</td><td>1. To make student understand the nature of computer network
2. To make student understand the Internet Communication.
3. To make student understand the nature of e-Commerce
4. To make student recognize the business impact and potential of e-Commerce
5. To explain the economic consequences of e-Commerce;
6. To discuss the trends in e-Commerce and the use of the Internet.</td></tr>
<tr><td>Course Outcome</td><td>CO1 : Understand students the fundamental aspects of the computer network, Internet and E-Commerce.
CO2 : Train students to understand various aspects to deal with the Internet connection like communication devices, PSTN, DSL, Network addressing.
CO3 : Familiarize students with the process of E-commerce and security concerns while using E-commerce in business management.
CO4 : Explain student recognize the business impact and potential of e-commerce and the economic consequence of e-Commerce
CO5 : Explain students the trends in e-Commerce and the use of the Internet.</td></tr>
<tr><td>Mapping between COs with PSOs</td><td>
<table>
<tr><th></th><th>PSO1</th><th>PSO2</th><th>PSO3</th><th>PSO4</th><th>PSO5</th><th>PSO6</th></tr>
<tr><td>CO1</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>CO2</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>CO3</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>CO4</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>CO5</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
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</td></tr>
<tr><td>Pre-requisite</td><td>NIL</td></tr>
</table>

Course Content	Unit 1: Networking Fundamentals 1.1 An Introduction to Networks 1.2 Components to connect computer to network 1.3 Categories of Computer Network – peer-to-peer, client-server, LAN, MAN and WAN 1.4 Introduction to Analog and Digital Signals 1.5 Transmission Media- Guided & Unguided 1.6 Transmission Categories- Simplex, Half Duplex & Full Duplex 1.7 Network Topologies- Bus, Ring, Star, Mesh 1.8 Need, Uses and Advantages of Computer Network Unit 2: Internet Communication 2.1 Communication devices to connect notebook computer to network- Infrared, Bluetooth, Ethernet and Cellular WAN Adapter 2.2 Internet connection from home or small office- PSTN, DSL, ISDN, Cable Modem 2.3 Network Addressing- Physical (MAC) & Logical (IP) Address 2.4 IP Addressing- Version 4 2.4.1 Subnet mask 2.4.2 Network Address Classes- A, B and C Unit 3: Introduction to E-Commerce 3.1 History of E-Commerce

	3.2 Concepts, Advantages and Disadvantages of E-Commerce 3.3 Impact of E-Commerce on business 3.4 Traditional Commerce and E-Commerce 3.5 Types of E-Commerce- b2b,b2c,b2e,b2g,g2b,g2g,g2c,c2c,c2b Unit 4: Electronic Payment Systems 4.1 Introduction to EPS 4.2 Types of Electronic Payment Systems-Payment card, Digital cash, Digital wallet, Smart card 4.3 Online banking (netbanking) 4.4 Electronic Funds Transfer 4.5 Payments on retail sites using credit/debit card, Netbanking etc. Unit 5: Case Studies 5.1 Travel Segment - IRCTC, GSRTC 5.2 Retail Segment - Flipkart, Snapdeal, Amazon, Jabong, Yepme 5.3 Wholeseller Segment - Alibaba, IndiaMart 5.4 Other Segments - Google Adsense, SMC, MyGov India, gujaratindia
Reference Books	1. Data Communication and Networking – B. Forouzan – MCGrawth Hill2. Computer Networks - A. S. Tanenbaum- PHI Publication 2. Networking Complete- 1st Edition 2002, BPB Publication (Text Book) 3. Black, "Computer Networks - Protocols, Standard, Interface", 2nd Edition, Prentice Hall of India 4. Business on the net - by Kamlesh N. Agarawala , Amit Lal & Deeksha Agarawal (Macmillan India Ltd.). 5. E-Commerce an Indian Perspective (Second Edition) By Pt Joseph, S.J., Prentice-Hall of India 6. E-commerce, The cutting edge of Business, K.K.Bajaj & D.Nag-TMH 7. Electronic Commerce, David Kosiur-PHI 8. E-Commerce, An Indian perspective, P.T.Joseph
Teaching Methodology	Class work, Discussion, Self Study, Seminars and/or Assignment
Evaluation Method	30 % internal assessment and 70% external assessment

Course: 204: Basics of Accounts and Accounting Package

Course Code	204
Course Title	Basics of Accounts and Accounting Package
Credit	4
Teaching per Week	4 Hrs
Minimum weeks per Semester	15 (Including Class work, examination, preparation, holidays etc.)
Review / Revision	June 2015
Purpose of Course	The purpose of this course is to introduce to teach basic concepts of Financial Accounting & explain working of Financial Accounting Software
Course Objective	1. To explain basic component of financial account and book keeping using ledger and subsidiary books. 2. To teach preparation of Final accounting statements 3. To explain working of accounting package for financial accounting.
Course Outcome	CO1. Gives knowledge of the basic terminology of financial and management accounting system CO2. Introduces the process of double entry system and its various components like Journal, Cashbook, Subsidiary Books and Ledger etc... CO3. Students will be able to understand the entire process of financial accounting starting from journal entry up-to preparing & interpreting final accounts. CO4. Explores the various component of accounting package and usage of accounting package for commercial use. CO5. Trains student to perform book keeping, to prepare final account and financial statements using accounting package.
Mapping between COs with PSOs	
Pre-requisite	NIL

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1						
CO2						
CO3						
CO4						
CO5						

Course Content	UNIT 1: Introduction to Accounting concepts 1.1 Definition of Accounting 1.2 Accounting principles 1.3 Introduction of financial, cost and management accounting 1.4 Classification of Accounts (Real , Personal & Nominal) 1.5 Identification of Transaction 1.6 Double entry system UNIT 2: Journal & Subsidiary Books (With Preliminary examples) 2.1 Journal 2.2 Cash Book & Petty cash Book 2.3 Purchase, Sale, Purchase Return and Sale Return Book UNIT 3: Accounting process 3.1 Recording of Transaction in Journal/subsidiary book 3.2 Posting to ledger 3.3 Preparation of Trial Balance 3.4 Passing Adjusting Entries 3.5 Preparation of Final Accounts UNIT 4: Working with accounting package – Book Keeping 4.1 Creation of Company 4.2 Opening the company making it active 4.3 Creating ledger A/c 4.4 Entering Vouchers 4.5 Access to the various Books of Account UNIT 5: Working with accounting package – Final Accounts 5.1 Creation of Financial Accounting Statement - Trial Balance, Trading A/c, Profit & Loss A/c , Balance Sheet 5.2 Ratio Analysis to interpreter financial statements

Reference Books	1. Financial Accounting - Vol. I, Mohammed Hanif & Amitabha Mukherjee, , Paperback 2. Modern Accountancy Vol. I, A. Mukherjee, Tata Mcgraw Hill 3. Basic Accounting-Concepts and Methods, Vijay Asdhir, Himalaya Publishing House 4. Book-Keeping And Accountancy, Prof. Jose Paul,Himalaya Publishing House 5. Computerized Accounting, P.H. Bassett, BPB Publication 6. Tally .ERP 9 in Simple Steps, Kogent Learning Solutions Inc., Wiley 7. Implementing Tally .ERP 9, A. K. Nadhani, Paperback
Teaching Methodology	Class work, Discussion, Self Study, Seminars and/or Assignment
Evaluation Method	30 % internal assessment and 70% external assessment

Course: 205: Practical-IV

Course Code	205
Course Title	Practical-IV
Credit	3
Teaching per Week	3 Hrs
Minimum weeks per Semester	15 (Including Practical work, examination, preparation, holidays etc.)
Review / Revision	June 2015
Purpose of Course	This course is to make aware students in database related programs in vb.net.
Course Objective	1. To make student understand advance controls of vb.net 2. To make student understand MDI based programming 3. To make understand students database related programming
Prerequisite	Ability write simple GUI program with basic controls using .NET Framework
Course Outcome	After studying this course, students shall be able to develop database related programs in Vb.Net.
Course Content	Practical based on Paper No 201 GUI Programming –II
Reference Books	As per Paper No 201 GUI Programming - II
Teaching Methodology	Lab. Work
Evaluation Method	30 % internal assessment and 70% external assessment

Course: 206: Practical-V

Course Code	206
Course Title	Practical-V
Credit	3
Teaching per Week	3 Hrs
Minimum weeks per Semester	15 (Including Practical work, examination, preparation, holidays etc.)
Review / Revision	June 2015
Purpose of Course	The course gives students knowledge about working with various client side technologies like CSS and JavaScript. Students can work with web page designing tools like Photoshop and Flash.
Course Objective	To make student practically work to implement various concepts of Validation, designing. To make student able to design web pages.
Prerequisite	Nil
Course Outcome	After studying this course, students will be able to understand and create HTML web pages with multimedia. This course will also help students to understand how to validate user Input and how to apply common design on every web page
Course Content	Practical based on Paper No 202 Web Designing tools
Reference Books	As per Paper No 202 Web Designing tools
Teaching Methodology	Lab. Work
Evaluation Method	30 % internal assessment and 70% external assessment

Course: 207 Project

Course Code	207
Course Title	Project
Credit	8
Teaching per Week	--
Minimum weeks per Semester	15 (Including project work, examination, preparation, holidays etc.)
Review / Revision	June 2015
Purpose of Course	The project work is introduced to make students implement their theory and practical knowledge they learned during this degree course to solve real life problem related to the industry, academic institutions or other organization. It involves practical work for understanding and solving problems in the field of computing
Course Objective	To help students develop their practical ability and knowledge about practical tools/techniques in order to develop software.
Prerequisite	Knowledge of programming methodology and GUI tools
Course Outcome	Student will be able to develop software applications.
Course Content	The students are required to carry out project during the semester. At the end of the semester, the students have to submit their project report in bounded form as per guideline given by department. The project report and project completion certificate is mandatory for appearing in Project Presentation and Viva – Voce.
Reference Books	--
Teaching Methodology	Project guidance, review
Evaluation Method	!00% assessment is based on the Project Presentation and Viva – Voce as conducted as per the University exam schedule.