IT SYLLABUS 2015-2018

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B.SC (INFORMATION TECHNOLOGY) – CBCS SYLLABUS (2015 – 2016)			
PART III - CORE, CORE ELECTIVE & PROJECT			
I SEMESTER			
C 1	C PROGRAMMING		15UITC11
Hrs / Week : 4	Hrs / Sem :4X15 60 4	Hrs / Unit : 12	Credits :

UNIT I

Overview of C Language   History of C- C Fundamental : constants-variable- data types - character set – C tokens – identifiers- keywords - data types - Operators & Expressions- Managing Input & Output Operations.

UNIT II

   Decision making & Branching : Introduction – IF statement - IF-ELSE- Nesting of IF ELSE – ELSE IF LADDER – Switch- Conditional Operator – GOTO Statement

   Decision making & Looping : Introduction – WHILE Statement – DO – FOR – Jumps In Loops

UNIT III

Arrays: Introduction –One Dimensional Arrays- Declaration-Initialization-Two Dimensional Arrays -Initialization –Multi Dimensional Arrays.

Functions : Introduction – Need for User Defined Functions –A Multi Function Program – Elements of User Defined Functions – Defintions of Functions – Category of Functions.

UNIT IV

Structures & Unions : Introduction – Defining a structures – Declaring Structure variables – Accessing Structure Members – Structure Initilization – Unions

Pointers : Introduction – Understanding Pointers – Accessing address of the variable – Declaring Pointer Variable - Initialization of pointer Variables – Pointers & Arrays.

UNIT V

   File Management in C : Introduction - Defining & Opening a File – Closing a File – Input / Output Operations & files– Random Access to File – Command Line arguments.

TEXT BOOK:

1. Programming IN ANSI C 4E by E. Balagurusamy

REFERENCE BOOK :
   1. Programming With C – C. Ravichandran

B.SC (INFORMATION TECHNOLOGY) – CBCS SYLLABUS (2015 – 2016)			
PART III - CORE, CORE ELECTIVE & PROJECT			
I SEMESTER			
C 2 INTRODUCTION TO COMPUTERS 15UITC12			
Hrs / Week : 3	Hrs / Sem :3X15=45	Hrs / Unit : 9	Credits : 4

UNIT I

Computers an Overview: Introduction to computers – Five Generations of modern computers- Classification of Digital computer Systems.- **Inside the computer:** Anatomy of digital computer – Computer Architecture.

UNIT II

Number system & Boolean Algebra: Number system – Boolean algebra and logic circuits. **Memory:** Memory units **–** Auxiliary Storage Devices Primary.

UNIT III

Input / Output: Input devices - Output Devices – **Computer Software & Software Development:** Introduction to computer software - Operating systems - Programming languages.

UNIT IV

Data processing and Networking: Data processing **–** Computer networks – Distributed data processing. **Telecommunications:** Introduction to Telecommunications. **Security:** Introduction to computer security – Cryptography - Computer Viruses, Bombs and worms.

UNIT V

Internet and Intranet: Internet and world wide web – Introduction to Intranets**. Multimedia and virtual reality:** Introduction to Multimedia - Multimedia tools - Introduction to virtual reality.

TEXT BOOK :

Alexis Leon and Mathews Leon. "Introduction to Computers" VIKAS publishing house Pvt Ltd, 1999.

B.SC (INFORMATION TECHNOLOGY) – CBCS SYLLABUS (2015 – 2016)			
PART III - CORE, CORE ELECTIVE & PROJECT			
II SEMESTER			
C 3 OBJECT ORIENTED PROGRAMMING WITH C++ 15UITC21			
Hrs / Week : 4	Hrs / Sem :4X15=60	Hrs / Unit : 12	Credit : 4

UNIT I - Classes and objects

Introduction- c structures revisited - specifying a class- defining member functions - a c++ program with class - Making an outside function inline - Nesting of member functions - Private member functions - Array within a class - Memory allocation for objects - Static data members - Static member functions - Array of objects - Object as function arguments - Friendly functions - returning objects.

UNIT II - Constructors and Destructors

Introduction – constructors - parameterized constructors - multiple constructor in a class - constructor with default arguments - dynamic initialization of objects - copy constructor - dynamic constructors - constructing two - dimensional arrays - const objects - Destructors.

UNIT III - Operator overloading

Introduction - defining operator overloading - overloading unary operators - overloading binary operators - overloading binary operators using friends - manipulation of strings using operators - rules for overloading operators.

UNIT IV - Inheritance: Extending classes

Introduction - defining derived classes- single inheritance - making a private member inheritable - multilevel inheritance- multiple inheritance - hierarchical inheritance - hybrid inheritance - virtual base classes - abstract classes - constructors in derived classes- member classes: Nesting of classes.

UNIT V – Pointers & Working with files

Introduction - pointers to objects - this pointer - pointers to derived classes- Introduction- classes for file stream operations - opening and closing a file - detecting End-of-file - more about open(): file modes - file pointers and their manipulations- sequential input and output operations- updating a file: Random Access - error handling during file operations - command-line arguments.

TEXT BOOKS:

1. Object –Oriented Programming with C++ By E.Balagurusamy

REFERENCE BOOKS:

1. Object – Oriented programming in Turbo C++ By Robert Lafore

B.SC (INFORMATION TECHNOLOGY) – CBCS SYLLABUS (2015 – 2016)			
PART III - CORE, CORE ELECTIVE & PROJECT			
II SEMESTER			
C 4 DIGITAL PRINCIPLES AND ITS APPLICATIONS 15UITC22			
Hrs / Week : 3	Hrs / Sem :3X15=45	Hrs / Unit : 9	Credit : 4

UNIT I

 Logic Circuits: Binary Number System neither OR Gates - AND Gates – Boolean algebra - NOR Gates NAND Gates. **Circuit Analysis and Design:** Boolean Laws and Theorem- Sum of Products method- Truth table to Karnaugh Map– Pairs, Quads, and Octets- Karnaugh simplification– Don't Care Conditions - Product-of sums method.

UNIT II

       Data Processing Circuits: Multiplexers – Demultiplexers-1-of-16 Decoder – BDC-to-decimal Decoders – Encoders – Exclusive-OR Gates.

UNIT III

       Number Systems and codes : Binary to Decimal conversion – Decimal to Binary conversion – Octal Numbers – Hexa Decimal Numbers- ASCII Code – The Excess 3 Code.

Unit IV

       Arithmetic Circuits : Binary Addition- Binary Subtraction–2'S Complement Representation - 2'SComplement Arithmetic – Arithmetic Building Blocks – The Adder – Subtracter. **Flip Flops:** RS Flip-Flops – D Flip-flops-JK Flip Flop- JK Master Slave Flip flop.

UNIT V

       Shift Registers : Types of Registers – Serial In-Serial Out – Serial In Parallel Out – Parallel In Serial Out – Parallel In Parallel Out. **Counters:** – Asynchronous Counter - Synchronous Counter - Shift Counters - Ring Counter- A Digital Clock.

TEXT BOOK

 1. Digital Principals and Applications –Albert Paul Malvino, Donald P Leach,
Forth Edition, The McGraw-Hill Publishing Companies Lmt - 2001

 Reference Book

1.   Digital Computer Fundamentals , Thomas C. Bartee TMH 2007.
2. Digital Circuits and Design, S. Salivahanan and S. Arivazhagan , Vikas Publishers. 2005

I & II SEMESTERS		
CP I	**INFORMATION TECHNOLOGY** **CORE PRACTICAL I ***	**15UITC2P**
Hrs / Week : 3	**Hrs / Sem :3X5 = 45**	**Credits : 3**

*Examination at the end of II Semester

C PROGRAMMING PRACTICAL

1. Program using If statement.

2. Program using while & do – while statement.

3. Program using switch statement.

4. Program using for statement.

5. Program using one dimensional array.

6. Program using two dimensional arrays.

7. Program using Functions.

8. Programs using Recursions.

9. Program using strings.

10. Program using Structure.

11. Program using file concepts.

C + + PROGRAMMING PRACTICAL

1. Program to demonstrate all manipulators in C++.

2. Swap 2 Values

3. Evaluate an expression using macros (Macrosinic & inline function C++)

4. Compare any 2 elementary data types in C++ using function overloading.

5. Find m power n values using default arguments.

6. Program to perform simple banking operation.

7. Write a program using operator overloading .

8. Programs using multiple inheritance, hybrid inheritance, hierarchical   inheritance,
   multilevel inheritance.

9. Program using polymorphism and virtual functions.

10. Create and copy a text file to another.

III SEMESTER		
C 5 **OBJECT ORIENTED PROGRAMMING WITH JAVA**		**15UITC31**
Hrs / Week : 5 **Hrs / Sem : 5x15=75** **Hrs / Unit : 15**		**Credits :4**

UNIT I

Introduction to Java – Features of Java – Java Development Environment –Simple programs – Java History and Feature – Java Development Kit (JDK) – Java Tokens – Java Statements – variables - Java Character set – Operators – Strings and StringBuffers.

UNIT II

Classes, Interfaces and Packages: Conditional and Looping Statements - Classes – Objects –- Static members- Abstract and Final classes -Method Overloading – Method Overridding. - Wrapper Classes

UNIT III

Constructor **-** Inheritance Extending classes– Interfaces and Inheritance - Final Variables and Methods—arrays – Packages and Interfaces.- Threads – Creating Threads – Life Cycle of Threads – Extending Thread Class – Accessing thread members.

UNIT IV

Exception Handling: Error Handling and Exception Handling – Exception Types and Hierarchy – Try Catch blocks – Use of Throw, Throws and Finally – Programmer Defined Exceptions.

UNIT V

Applets and Graphics: Fundamentals of Applets – Graphics. **AWT and Event Handling:** AWT components and Event Handlers – AWT Controls and Event Handling Types and Examples –Introduction. **Input and Output:** Files – Streams.

TEXT BOOK

1. Programming with Java a primer 4/E ,E . Balaguruswamy, Mc.Graw Hill
REFERENCE BOOKS

1. Programming with Java - C. Muthu

III SEMESTER		
C6	SYSTEM ARCHITECTURE	15UITC32
Hrs / Week : 5	Hrs / Sem : 5x15= 75 Hrs / Unit : 15	Credits : 4

UNIT I

    Basic Computer Organization and Design : Instruction Codes – Computer Registers – Computer Instructions – Timing And Control – Instruction Cycle – Design of Basic computer – Design of Accumulator logic. **Programming the basic Computer:** Introduction – Machine Language - Assembly Language - The Assembler – Program Loops- Subroutines.

UNIT II

    Central Processing Unit: Introduction - General Register Organization – Stack Organization – Instruction Formats –Addressing Modes - Program Control – CISC, RISC Characteristics.

UNIT III

    Pipe Lines and Vector Processing: Parallel Processing – Pipelining – Instruction Pipeline - Vector processing- Array Processors. Computer Arithmetic: Addition and Subtraction – Multiplication Algorithms – Division Algorithms.

UNIT IV

    Input output organization: Input Output Interface – Asynchronous Data Transfer- Modes of Transfer- Priority Interrupt- Direct Memory Access- Input output Processor- Serial Communication.

UNIT V

    Memory Organization: Memory Hierarchy - Main Memory - Auxiliary Memory - Associative Memory - Cache Memory - Virtual Memory**. Multiprocessor :** Interprocessor Communication and Synchronization.

TEXT BOOK :

    M. Morris Mano - Computer System Architecture - Third Edition

REFERENCE BOOK:

    S.Salivahanan and S.Arivalagan Digital Circuits and Design, VIkas Publishing House Pvt. Ltd,2005

III SEMESTER		
C7	DATA STRUCTURES	11UITC33
Hrs / Week : 5	Hrs / Sem : 75 Hrs / Unit : 15	Credits :4

Unit 1:

Basics of Data Structures: Basic data types-linear,non linear- psedo code-alogrithm efficiency-List searches-Sequential,binary-Hashed list searches.

Unit 2:

Lists: Linear List Concepts – Linked list Concepts - Definition representation, operations, implementation and applications – Types of linked List - singly, doubly and circular linked lists. Implementation of stack and queue using linked lists.

Unit 3:

Stacks and Queues: Stacks- Definition, representation, operations, static implementation and applications of stack.

Queues:Definition, representation, operations, static implementation and applications of queue, circular queue, priority queue.

Unit 4:

Trees: Basic tree Concepts –Binary Trees- Binary Tree Traversals-DFS, BFS –Expression Trees - Binary search tree - AVL trees- B tree- B+ tree and their applications.

Unit 5:

 Sorting Concepts: General Sort Concepts- Insertion sort- Selection Sort – Exchange Sort –External Sort.

Graphs: Terminology –Operations – Graph Storage Structures –Graph Algorithms –Networks.

Text Books:

1.Data Structures- A Pseudocode Approach with C – Richard F. Gilberg and Behrouz A. Forouzon 2nd Edition

Reference books:

1.Data Structures Using C-A.M. Tanenbaum, Y.Langsam.

2. Seymous Lipshutz, Scharms Outlines Data Structures, Mc Graw Hill publishing.

IV SEMESTER		
C 8	**WEB DESIGNING LANGUAGES**	**15UITC41**
Hrs / Week : 5 : 4	**Hrs / Sem : 75**	**Hrs / Unit : 15**	**Credits**

Unit I:

Introduction to HTML-History of HTML, HTML Document, Anchor Tag, Hyper Links. Head and body sections-Header section-Title, Prologue, Links,Colorful Web Page,Comment Lines. Designing body section-Heading printing, Aligning the headings,Horizontal rule, Paragraph, Tab Settings.

Unit II:

Lists, Unordered Lists, Ordered Lists, Table Handling. Frames: Frameset definition-Nested Framesets-Forms-Action Attribute-Drop Down list-Check Boxes-Radio Buttons-Text Field-Text Area-Password-Hidden-Submit and Reset Buttons.

Unit III:

XML Basics- Getting a Global Perspective- Reviewing XML Validating and Nonvalidating Parsers-Saying "Hello World" in XML-Chapter 4: Organizing XML Data-Creating Well-Formed XML- Adding Attributes- XML Namespaces- Working with DTD- Validating Your XML Documents- Defining DTD Entities-Working with Attributes- Adding Other Data.

Unit IV:

Adding Style:When to Use Style Sheets- CSS Basics- CSS: The Next Step-XSL Basics-XSL Transformations-XSL: Completing Your Application-Using Schemas-Introducing Schemas-Schema Elements, Types, and Groups-Defining Schema Attributes.

Unit V:

Using XML Query:Introducing XML Query-Xlinks-Using Xpointer-Resource Description Framework-XML in Action-XHTML-Manipulating XML with JavaScript-Collecting and Writing Data with CGI.

Text Books:

1. C.Xavier, World Wide Web Design with HTML, Tata McGraw-Hill Publishing.
2. Heather Williamson, "The Complete Reference in XML", First edition, Tata McGraw hill publication.

IV SEMESTER		
C 9	**MODERN OPERATING SYSTEMS**	**15UITC42**
Hrs / Week : 5 : 4	Hrs / Sem : 75	Hrs / Unit : 15	Credits

Unit 1

Introduction : Mainframe Systems- Desktop Systems- Multiprocessor System- Distributed Systems- Clustered Systems- Real Time Systems- Handheld Systems- Feature Migration- Computing Environments

Unit 2

Process: Process Concept- Process Scheduling- Operations on Processes- Cooperating Process- Interprocess Communication- Communication in client Server Systems

Unit 3

Process Synchronization: The Critical section problem- Synchronization Hardware- Semaphores- Classical problems of Synchronization- Critical Regions- Monitors- OS Synchronization- Atomic Transactions-Deadlocks

Unit 4

Memory Management: Swapping- Contiguous Memory allocation- Paging- Segmentation- Segmentation with Paging

Virtual Memory : Demand Paging- Process Creation- Page Replacement- Allocation of Frames- Thrashing

Unit 5

File System Interface : File Concept- Access Methods- Directory Structure- File System Mounting- File Sharing- Protection.

File System Implementation : File System Structure- File System Implementation- Directory Implementation- Allocation Methods- Free Space Management- Efficiency and performance- Recovery

 TEXT BOOK :

1.   Operating System Concepts- Silberschatz and Peter B. Galvin Addison Wesle Publishers Sixth Edition.

REFERENCE BOOKS :

1. Operating Systems - Milan Milenkovic- Tata Mcgraw - Hill Edition – Second Edition.

2. Systems Programming And Operating Systems - Dhamdhere- Tata Mcgraw – Hill Edition.

IV SEMESTER		
C 10	**COMPUTER NETWORKS**	**15UITC43**
Hrs / Week : 5	**Hrs / Sem : 75**	**Hrs / Unit : 15** **Credits : 4**

Unit I

   Introduction - Uses of computer networks : business applications-home applications-mobile users- Network Hardware:LAN-MAN-WAN-wireless networks-Network Software: protocol hierarchies- Design Issues for the Layers - Connection oriented and connection less services- **Reference model :** OSI reference model – TCP/IP Reference Model

Unit II

   The Physical Layer - Guided Transmission media: Magnetic Media-Twisted Pair-Coaxial Cable-Fiber Optics. **Wireless Transmission:** The Electromagnetic Spectrum – Radio Transmission. **Communication Satellites:** Geostationary Satellites. **The Public Switched Telephone Network:** Switching. **The Mobile Telephone System:** First Generation Mobile Phones (Analog Voice) – Second Generation Mobile Phones (Digital Voice).

Unit III

   The Data Link Layer - Data Link Layer Design Issues : Services Provided to the Network Layer – Framing – Error Control – Flow Control. **Sliding Window Protocols :** A One-Bit Sliding Window Protocol – A Protocol Using Go Back N - **The Network Layer - Network layer design issues - Routing Algorithm:** Shortest path Routing- Flooding - Distance vector routing-Broad cast routing-Multi cast routing-**Quality of service:** Integrated services-Differentiated services-The **Network Layer in the Internet:** The IP Protocol- IP addresses-Mobile IP.

Unit IV

   The Transport Layer - The Transport services: Service provided to the upper layer-**Elements of Transport Protocols:** Addressing-Flow control and buffering -Multiplexing- **The Internet Transport protocols:** UDP:-Introduction-Remote procedure call- **TCP:**-Introduction-TCP Service model-TCP protocol- TCP Segment header-TCP Timer management-Wireless TCP & UDP-Transactional TCP.

Unit V:

   The Application Layer - Domain name system: DNS namespace- Name servers-**Electronic Mail:** Architecture and services-User Agent-Message format and transfer-Final delivery-**The World Wide Web:** Architectural overview-Static and Dynamic Web documents-HTTP- TheWireless Web-**MultiMedia:** Introduction to digital audio-Audio compression- streaming audio-Introduction to video-video compression. **Network Security :** Cryptography - Communication Security.

TEXTBOOK:

Computer Networks- Fourth Edition: Andrew S. Tanenbaum, Prentice Hall of India Pvt Ltd. 2005.

REFERENCE BOOK :

Computer Networks – Fundamentals and applications – R.S . Rajesh and R. Balasubramanian, K.S Easwarakumar, Vikas Publications, New Delhi

III & IV SEMESTER		
CPII	CORE PRACTICAL	15UITC4P
Hrs / Week :3	Hrs / Sem : 45	Credits : 3

OBJECT ORIENTED PROGRAMMING WITH JAVA

1. Program to find the sum of digits of a given number
2. Program to create String object and working with String function
3. Program to read N numbers in array and Find the largest and Smallest Numbers
4. Program using class and objects
5. Program to find area of rectangle,circle and squarer using method overloading
6. program using Multi_Level inheritance
7. Program to show how a class implements two interfaces.
8. Program to catch more than one exceptions.
9. Program to create user_defined exception.
10. Program using threads.
11. Program using Packages.
12. Program to copy a text file into another text file
13. Create an applet to draw different shapes.
14. Create an applet to move an object.
15. Create an applet to calculate simple interest

AND

WEB SERVICES PRACTICAL

1. Design a simple web page using HTML.
2. Design a web page in HTML using hidden fields.
3. Design a web page in HTML using frames.
4. Design a web page in HTML using list.
5. Design a web page in HTML using tables.
6. Design a web page in HTML using forms
7. Design a simple XML documents.
8. Design a web page in XML using CSS.
9. Design a web page in XML using XSLT.
10. Design a web page in XML using XPath.
11. Design a web page in XML using XLink.
12. Design a web page in XML using Internal DTD.

13. Design a web page in XML using External DTD.
14. Design XML page using Entities.
15. Design XML page using javascript.

V SEMESTER			
C 11	GUI DESIGN WITH VB		15UITC51
Hrs / Week : 6	Hrs / Sem : 90	Hrs / Unit : 18	Credits : 5

UNIT I

Integrated Development Environment (IDE) And Forms: Introducing Visual BASIC – Learning the IDE Features – Working with Forms: The Anatomy of a Form – Working with Form Properties – Tweaking a Form's Properties – Introducing Form events – Introducing Form methods – Working with Multiple Document Interface (MDI) Forms.

UNIT II

Logic And Program Flow, Data Types: Understanding Logical operators – Making comparisons – Evaluating Conditions in code – Performing repetitive tasks. Introducing variables – Arrays – Constants.

UNIT III

Selecting And Using Controls: Introducing Controls – Command Buttons – Text Boxes – Labels – Option Button – Check Boxes – Frame Controls – List Boxes-Combo Boxes – Image objects – Picture objects Timers – Scroll Bars – Drive Lists – Directory List Boxes – file List Boxes.

UNIT IV

Modules, classes, Menus, And Tool Bars: Introducing Code Modules and Classes – Creating a code Library – Working with sub procedures – Working with Function procedures – Using Private and public sub procedures. Understanding the Menu Object – Creating a menu with the Menu.

UNIT V

Storing and Retrieving Data, Dialog Boxes: Working with ASCII Files – Data controls – Understanding the Anatomy of a database – Creating data bases with Visual Data Manager – Creating a Data base Table – Data Grid Control- Creating a Query – Modifying a table – DAO- RDO – ADO – Data reports.

TEXT BOOK:
1. Visual BASIC 6 In Record Time – Steve Brown _ bpb Publication.

REFERENCE BOOK:
1. Visual BASIC 6 – Paul Sheriff – PHI
2. The Complete Reference Visual BASIC 6 – Nole Jerke – TATA McGRAW – HILL Edition

V SEMESTER			
C 12	SOFTWARE ENGINEERING		**15UITC52**
Hrs / Week : 5	**Hrs / Sem : 75**	**Hrs / Unit : 15**	**Credits : 5**

UNIT I

Introduction : What is Software Engineering – Software Process –software Process model – software engineering methods. CASE Computer Based System Engineering System properties – system environment – system modeling – system engineering process – system requirements – system design – system evolution – system decommissioning – system procurement. Software processes: Software Process models: Process iteratin - Software Specification – design and implementation – Software validation – Software Evolution – automated process support.

UNIT II

Project Management : Project Management :Management activities – Project Planning – Project Scheduling - Risk management. Software requirement : Functional and non-functional requirements – user Requirements – system requirements – Software requirements document. System Models – Context models – Behavioural models – data models – Object models – CASE workbenches.

UNIT III

Software Prototyping : Prototyping in the software process – Rapid prototyping techniques – user interface prototyping .Architectural Design - System structuring – Control models – Modular decomposition – domain specified architecture.

UNIT IV

Object oriented design: Object and object classes – An object oriented design process – design evolution. Real time software - System design – real-time executives – monitoring and control systems – data acquisition systems. User Interface design: User Interface design – User interaction – information presentation – user support – interface evaluation. Verification and Validation: Verification and Validation planning – Software inspections.

UNIT V

Automated static analysis – clean – room software development .   Software testing: Defect testing – Integration testing – Object oriented testing – Testing workbenches. Software cost estimation: Productivity – Estimation techniques –   Algorithmic cost modeling – Project duration and staffing. Quality management: Quality assurance and standards – Quality planning – Quality control – Software measurement and metric.

TEXT BOOK : Software Engineering , IAN SOMMERVILLE , 6th Edition ,Pearson Education Asia   Chapters 1 to 5,7,8,10,11,12,13,14,15,19,20,23,24.

REFERENCE BOOK : Software Engineering Theory and Practices, Shari Lawrence Pfleeger, 2nd Edition, Pearson Education Asia.

V SEMESTER			
C 13 **15UITC53**	**MOBILE COMPUTING**		
Hrs / Week : 5 : 5	**Hrs / Sem : 75**	**Hrs / Unit : 15**	**Credits**

UNIT I   WIRELESS COMMUNICATION FUNDAMENTALS

Introduction – Wireless transmission – Frequencies for radio transmission – Signals – Antennas – Signal Propagation – Modes of propagation- line of sight transmission– Multiplexing – Modulations – Spread spectrum– TDMA – Cellular Wireless Networks.

UNIT II TELECOMMUNICATION NETWORKS

Telecommunication systems – GSM – GSM architecture-GPRS – DECT – Satellite Networks - Basics –Broadcast Systems – DAB - DVB.

UNIT III WIRLESS LAN

Wireless LAN – IEEE 802.11 - Architecture – services – MAC – Physical layer – IEEE 802.11a - HIPERLAN – Blue Tooth.

UNIT IV MOBILE NETWORK LAYER

Mobile IP – Tunneling and Encapsulation– Reverse Tunneling-Dynamic Host Configuration Protocol –Ad-hoc Networks- Routing – DSDV – DSR – Alternative Metrics.

UNIT V TRANSPORT AND APPLICATION LAYERS

Traditional TCP – Congestion Control- Mobility- Indirect TCP-Snooping TCP-Mobile TCP-WAP- WAP Specification-Wireless Datagram, Transaction, Session Protocol .

TEXT BOOKS
1.   Jochen Schiller, "Mobile Communications", PHI/Pearson Education, Second Edition, 2003. (Unit I Chap 1,2 &3- Unit II chap 4,5 &6-Unit III Chap 7.Unit IV Chap 8- Unit V Chap 9&10.)

REFERENCES

1. William Stallings, "Wireless Communications and Networks", PHI/Pearson Education, 2002. (Unit I Chapter – 7&10-Unit II Chap 9)
2. Kaveh Pahlavan, Prasanth Krishnamoorthy, "Principles of Wireless Networks", PHI/Pearson Education, 2003.
3. Uwe Hansmann, Lothar Merk, Martin S. Nicklons and Thomas Stober, "Principles of Mobile Computing", Springer, New York, 2003.

VI SEMESTER			
C 14 11UITC61	COMPUTER GRAPHICS USING C		
Hrs / Week : 5 : 5	Hrs / Sem : 75	Hrs / Unit : 15	Credits

UNIT I:

Introduction to computer Graphics - Video display devices- Raster scan Systems - Random Scan Systems - Interactive input devices - Hard copy devices - Graphics software

UNIT-II

Output primitives - line drawing algorithms - initializing lines - line function - circle Generating algorithms-Ellispe-Generating algorithms.

UNIT- III

Two-dimensional Geometric Transformation: Basic transformation-Matrix Representations and Homogeneous coordinates-Composite Transformations-other Transformations.

UNIT-IV

Two - dimensional viewing - window- to view port co-ordinate transformation-Two dimensional Viewing functions-Clipping operations-point clipping-line clipping-polygen and curve clipping.

UNIT- V

Three - dimensional concepts - Three dimensional display methods - parallel Projection - Perspective Projection - Depth Cueing - Visible line and surface identification - Three dimensional transformations.

Text Book :

1. D.Hearn and M.P.Baker - Computer Graphics (C version) - Pearson Education.

Reference Book:

1. W.M. Newman and RF.Sproull - Principles of Interactive Computer Graphics - McGraw Hill International Edition - 1979.

VI SEMESTER			
C 15 11UITC62	MOBILE APPLICATION AND DEVELOPMENT		
Hrs / Week : 5	Hrs / Sem : 75	Hrs / Unit : 15	Credits : 5

UNIT-I

Introduction to Android – What is Android – Advantages of Android – Preparing of Liftoff: Java – Eclipse – Android – SDK. – Android Development Environment: Installing Java, Eclipse and Android – updating the Android SDK: Setting up AVDs and Smart Phone Connections – Developing on 64 Bit Computing Platforms

UNIT-II

Introducing the Android Software Development Platform: Understanding Java SE and the Dalwik Virtual Machine – The directory Structure – Android XML and Android Application Resources – Launching Application: Android Manifest.XML – Creating your first Android Application – Android Frame work Overview – Foundation of OOPS – Overview of XML – The APK File – Android Application Components – Android Intent Objects – Android Manifest XML

UNIT-III

Screen Layouts Design: Views and Layouts – Android view Hierarchical – Defining Screen Layouts using XML – UI Design: Buttons, Menus, Dialogs – Using Common UI Elements – Using Menus in Android – Adding Dialogs

UNIT-IV

An Introduction to Graphic Resources in Android: Introducing the Drawables – Using Bitmap Images in Android – Creating Animation in Android – Using Transitions – Creating 9-Patch Customs Scalable Images – Playing Video in your Android Apps - Adding Interactivity: Handling UI events - An overview of UI events in Android – Handling Onclick events

UNIT-V

In understanding content providers: An overview of Android Content Providers – Defining a Content Providers – Working with a Database – Understanding Intents and Intent Filters – What is an Intent – Android Intent Messaging via Intent Objects – Intent Resolution: Implicit Intents and Explicit Intents – Using

Intents with Activities – Android Services – The Future: Widgets – Location Basis Services in Android – Google Maps in Android – Google Search in Android – Data Storage in Android

TEXT BOOK :

Android Apps for Absolute Beginners 2nd Edition by Wallace Jackson, Apress

REFERENCE BOOKS :

1. Professional Android Open Accessory Programming with Arduino by Andreas Goransson, David Cuartielles Ruiz
2. Enterprise Android Programming Android Database Application for the Enterprise by Zigurd Mednieks, G.Blake Meike, Laird Dornin, Zane Pan

VI SEMESTER		
C16	**PROJECT**	**15UITP61**
Hrs / Week : 5	**Hrs / Sem : 90**	**Credits : 5**

OBJECTIVES :

At the end of the semester the students should be able to:

1. Identify the potential areas of interest in his/her field;

2. Collect data from various sources including the internet, analyse them, make new connections and link them to life;

3. Read and write originally and usefully.

GUIDELINES :

1. The project may be done   individually or in groups   **not exceeding five per group.**

2. The minimum length of the project should be 30 pages in A4 size.

3. The project may not be experimental oriented

4. Project should be cheap within the expense of students limit.

5. It can be of survey method.

6. Marks for the project report will be 100 divided as **60% for the presentation of project and 40% for viva-voce.**

V & VI SEMESTERS		
CP III	CORE PRACTICAL III	15UITC6P1
Hrs / Week : 3	Hrs / Sem : 45	Credits : 3

VISUAL BASIC

1. Create a calculator that can add, subtract, multiply and divide two numbers given by the user.

2. Write a program to convert inches to centimetres OR centimetres to inches (using the conversion 1 inch = 2.54 centimetres).

3. Program to animate a Picture.

4. Program to create Menu.

5. Program to manipulate and formatting a text

6. Program to pick a color from color dialog box

7. Program to create a Stop watch using Timer Control

8. Program using String function

9. Program using Common Dialog Control

10. Program using Modules and Function.

11. Program to Save the content of list box in a file

12. Viewing Records using Database controls

13. Adding records to the database

14. Display the information in the report form.

15. View and edit data using Data Grid control.

V & VI SEMESTERS		
CP IV	**CORE PRACTICAL IV**	**15UITC6P2**
Hrs / Week : 3	**Hrs / Sem : 45**	**Credits : 3**

COMPUTER GRAPHICS USING C

1. Program to draw line using Bresenham's Algorithm
2. Program to draw circle using Bresenham's Algorithm
3. program to draw an object and fill it using various styles
4. program using any filling algorithm
5. program to use transformations
6. program to draw a natural scenery
7. program to animate an object
8. program to draw text in various styles
9. program to scroll a text
10. program to clip a line

V SEMESTER			
CE 1 A	ORACLE		15UITE5A
Hrs / Week : 5	Hrs / Sem : 75	Hrs / Unit : 15	Credits : 6

UNIT I

Introduction to oracle server -data dictionary-table Space and data files -data blocks -extents and segments - Structure of Relational Databases – The Relational Algebra – The Extended Relational – Algebra operations – Modification of Database.

UNIT II

Data types –constraints-creating and maintaining tables –DDL –DML – arithmetic operators-logical operators-relational operators-other comparison operators.

UNIT III

Working with tables: function and grouping-built-in functions- character functions – numeric functions – data functions – other functions – conversion functions – nested function – group function-grouping data-having clause- Multiple tables: joins-set operations.

UNIT IV

Index – sequence – view – users – privileges and roles – synonyms.

UNIT V

PL/SQL: PL/SQL –control structures- triggers – stored procedures and functions – packages – cursors –Exception handling- transactions

TEXT BOOK :

1. Database system using oracle – Nileshshah
    Chapter 4 to 7, 10 to 12 and 14.

REFERENCE BOOK :

1. Jose. A. Ramalho – Learn Oracle, B.P.B Publications.
2. Alex Leon, Database Management System

V SEMESTER		
CE 1B	C # PROGRAMMING	15UITE5B
Hrs / Week : 5	Hrs / Sem : 75	Hrs / Unit : 15	Credits : 6

UNIT I

Introduction to .NET Framework – Comparing C# to C++ - Comparing C# to Java – How to write a Program in C#

UNIT II

Variable Types: Value Types – Reference Types –Escape sequences and verbatim Strings – Boxing Pointers : Pointer Notation – unsafe code – Pointers, Methods and Arrays . Arrays : Single Dimension Arrays- Rectangular Arrays – Jagged Arrays

UNIT III

Enumerations – Operators – Overloading Operators – Loop Statements : while, do while, for, fore ach statements – Jump Statements – Selection Statements

UNIT IV

Classes and Types – Inheritance – abstract Classes and Interface – Nested Classes – Structs – Namespaces – Class Atributes – Class Modifiers – Method Attributes and Modifiers – Formal parameters – Passing parameters – Meathod Overloading –Polymorphism : Method overloading, Method overriding – Constants , fields, Indexes and properties

UNIT V

Delgate Declaration and Instantiation- Events – Exceptions – Preprocessor Directivies – C# Documentation Comments – Generating c# Documentation

TEXT BOOK :

1   Programming in c# - Balagurusamy E 2007 Mcgraw Hill Education Ltd.

VI SEMESTER			
CE 2 A 15UITE6A	ASP .NET		
Hrs / Week : 5	Hrs / Sem : 75	Hrs / Unit : 15	Credits : 6

UNIT I

The .NET framework – The .NET programming framework – VB.NET , C#, and the NET language – the common language runtime – the .NET class library – ASP .NET – visual studio .NET

Learning the .NET language – Data types – declaring variables – scope and accessibility – variable operations – object based manipulation – conditional structures – loop structures – functions and subroutines

UNIT II

ASP .NET Applications – ASP .NET Applications – code behind the global ASP application file – understanding ASP .NET classes – ASP .NET configuration

Web form fundamentals – a simple page Applet – improving the currency converter – a deeper look at HTML control classes – the page class – assessing HTML server controls.

UNIT III

Web controls – stepping up to web controls – web control classes – auto post back and web control events – a simple web page applet – assessing web controls

Using visual studio .NET – the promise of Visual Studio .NET – starting a visual studio .NET project – the web form designer – writing code – visual studio . NET debugging – working without Visual Studio .NET

UNIT IV

State management – the problem of state – view state – transferring Information – custom cookies – session state – session state configuration – application state

Tracing and logging – logging exceptions – error pages – page tracing

UNIT V

Component based programming – why use components – creating a simple component – properties and state – database components – a simple database component using COM components

TEXT BOOK :

1. The complete reference ASP .NET , Mathew Macdonald, TMH 2002

REFERENCE BOOK :

1.Microsoft ASP. NET Step by step , G. Andrew Duthie, PHI

VI SEMESTER		
CE 2B	**PHP**	**15UITE6B**
Hrs / Week : 5	Hrs / Sem : 75	Hrs / Unit : 15	Credits : 6

Unit – I

Introduction: PHP History – Unique Feature – Writing and running the script – Mixing PHP with HTML – Variables and operators: Assigning values to variable – Destroying and inspecting variable content – PHP Data Types - Manipulating variable with operators.

Unit – II

Controlling program flow: writing simple conditional statements – if – if else – if else if -Switch case Repeating action with loops: while – do while – for loops – String functions – Numeric function.

Unit – III

Working with Array: Storing data in Array – Assigning Array values – Nesting Arrays – for each loop – Array functions –Generating Date and Time – Format Date and Time – Date and Time functions.

Unit – IV

Functions: Creating and invoking function – using arguments and return values -
Cookies: Basics – Attributes – Headers – setting , reading and removing cookies – Session: Basics – Creating and removing sessions – Handling scripting Errors.

Unit – V

Working with database and SQL: Database, records, primary and foreign key - SQL statements – Creating database – Adding Tables – Adding Records – Executing Queries – modifying and removing records – Retrieving Data – Returning data as array and object.

Text Book:

PHP A Beginner's Guide – Vikram Vaswani – Tata Mc Graw Hill .

V & VI SEMESTERS		
CEP A	CORE ELECTIVE PRACTICAL	15UITE6AP
Hrs / Week : 3	Hrs / Sem : 45	Credits :3

ORACLE PRACTICAL

1. Creating, modifying and dropping tables.
2. Creating tables with referential and check constraints.
3. Inserting, modifying, deleting rows.
4. Dropping, disabling / enabling constraints.
5. Retrieving rows with operators in where clause.
6. Retrieving rows with Character functions.
7. Retrieving rows with Number and Data functions.
8. Retrieving row with Group functions and HAVING.
9. Joining Tables (Inner and Outer)
10. Simple PL/SQL Programs.
11. PL/SQL programs with control structures.
12. PL/SQL programs with procedures
13. PL/SQL programs with Cursors.
14. PL/SQL programs with Exception Handling.
15. Working with Triggers
16. Creating a view

ASP.NET

1) A. Create a page in ASP.Net using VB.Net or C#, to choose a color from drop-down-list and display a message "you have chosen 'color name' " in same color that you choose. Also add a color toolbox on the form to add color to button.

B. Create a page in ASP.Net using VB.NET or C# that takes name and message from the user and choose a color by radio button, select a style for ex.-bold, italic, underline from the checkbox and display in label control, when you clicked on display button. And clear the information when you clicked on clear button

2) Create a page in ASP.Net using VB.NET or C# that take a student name from the user, add that name in list-box control. And delete the chosen name from the list-box.

3) Create a page in ASP.Net using VB.NET or C#, to calculate compound interest. Take a compound frequency from drop-down-list. For example- Annual value-1, quaterly value-4,monthly value-12, daily value-365.

Formula:Temp= (1+rate/period)

Result=Principal amount+ Pow (Temp,(year*period))

4) Create a page in ASP.Net using VB.NET or C#, for book sales. Enter the quantity, title and price

of the book. Calculate the extended price, discount (15%) and after discount, the actual price of the book. Show the summery of book sales. (Like total no of books, total discount given, total

discounted amount and average discount.) You will need command buttons-
calculate, clear sale.

5) Create a page in ASP.Net using VB.Net or C#, using HTML Server controls that take user name, address, and city, state and country name from the user and display it.

6) Create a page in ASP.Net using VB.Net or C#, using HTML Server controls that convert given

currency into another selected currency. For that you need a drop-down-list.

7) Create a page in ASP.Net using VB.NET or C#, which generate a greeting card and display a greeting message in selected font. For that you need a drop-down-list for font selection.

8) Create a page in ASP.Net using VB.NET or C# that take Name, Password, Email add. & age from the user. Put appropriate validation. Show the summary of invalid validation.

9) Create a page in ASP.Net using VB.NET or C# to create a custom validation control that check even number.

10) Create a page in ASP.Net using VB.NET or C# that displays registration form. Fields are First Name, Last Name, Email, Password, repass, Age (dd-mm-yyyy), Ph. No., address, city, with appropriate validation controls such as email validation, city to choose from combo box options.

11) Create a page in ASP.Net using VB.NET or C# that takes no. of rows and columns from the user and make a table using Grid Control.

12) Design a database component for Account maintenance. The component should handle the following functionality Adding and Updating Account.

13) Create a page in ASP.Net using VB.NET or C#, to add a list box control to a Web forms page through coding which prompts for adding or deleting Name of fruits through indexing. The list box control properties should be user defined i.e. color, font etc. of the list box control.

V & VI SEMESTERS		
CEP B	**CORE ELECTIVE PRACTICAL**	**15UITE6BP**
Hrs / Week : 3	**Hrs / Sem : 45**	**Credits :3**

C # PROGRAMMING PRACTICAL

1. Find Maximum of an Array.
2. Find Factorial of a number using recursion.
3. Write a program to generate Fibonacci series for a given number.
4. Create a class with your own attributes and with suitable constructor and method to display the details of a Television Set.
5. Write a C# Program to evaluate the following function values

$$f(x) = x^2 + \sin 2x \quad \text{if} \quad x < 3$$

$$= 10.3 \quad \text{if} \quad x = 3$$

$$= x^3 - \cos 3x \quad \text{if} \quad x > 3$$

6. Write a program to check whether a given integer is a prime number.
7. Write a program to calculate the value of $\sin(x)$, $\cos(x)$ and e^x
8. Write a program to add, subtract and multiply two matrices.
9. Define a class with certain attributes.Write a C# program to throw user defined Exception.
10. Write a program to copy contents of a file to two different destinations using command line input.

PHP PRACTICAL

1. Write a PHP code using if else statement.
2. Write a PHP code using while loop.
3. Write a PHP code to print the multiplication table.
4. Write a PHP code using string and numeric functions.
5. Write a PHP code using array functions.
6. Design a HTML form using HTML Control and write a PHP code for displaying the employee's information.
7. Write a PHP code for Adding, Deleting, and Modifying records.
8. Write a PHP code using function.
9. Write a PHP Code using function
10. Write a PHP code to add and retrieve an image into database through form

III SEMESTER			
SBE 1	MANAGEMENT INFORMATION SYSTEM		15UITS31
Hrs / Week : 3	Hrs / Sem : 45	Hrs / Unit : 9	Credits : 2

UNIT I

Foundation concept : Information systems and technologies – Business Applications – Development and Management

UNIT II

Information technologies : Managing data sources – Technical foundations of Database Management .

UNIT III

Business applications : Functional Business Systems – Cross functional enterprise systems – Decision support in business

UNIT IV

Development process : Planning fundamentals – Implementation Challenges – Developing Business Systems – Implementing Business Systems

UNIT V

Management challenges : Managing Information Technology – Managing Global IT - Real world case studies

TEXTBOOK :

1.**"**Management Information System"   Sixth edition, James A.O.Brien, TMH Chapters 1,2,3,4,5,8,9,10,12,Appendix A-1

REFERENCE BOOK :

1."Management Information System ", Laudon & Laudon, Nineth Edition, PHI

	IV SEMESTER		
SBE 2	INTERNET SECURITY		15UITS41
Hrs / Week : 3	Hrs / Sem : 45	Hrs / Unit : 9	Credits :2

Unit I: Introduction

Security trends – The OSI Security Architecture – Security Attacks: Passive Attacks – Active Attacks- Security Services –security Mechanism.

Unit II : Malicious Software

Viruses and Related threats: Worms - Types of Worms – Backdoor – Logic bomb – Trojan Horses – Virus Structure – Types of Viruses – Virus Counter measures – Denial of Service Attack – Intruders

Unit III : Firewalls

Firewall Design Principles.-Types of Firewalls:Packet Filters-Application-Level Filtering.,Circuit_Level Gateways - trusted System – Common Criteria for Information Technology Security Evaluation.

Unit IV : Web Security

Web Security Consideration: Web Security Threats – Web Traffic Security Approaches – SSL: SSL Architecture-TLS - SET:SET Overview – Features of SET – SET Participants –Basic Concepts of SNMP

Unit V: IP Security

IP Security Overview – Applications of IPSec – Benefits of IPSec– IPSec Services –Role of an Internet Protocol – Ipv4 –Ipv6.– IP security Architecture

TextBook:

Network Security Essentials Application and Standards : third edition

Author : William Stallings, Pearson Education.

Unit I :Chapter 1; Unit II : Chapter 9,10 ; Unit III : Chapter 11 ; Unit IV: chapter 7,8 ; Unit V : 6

Reference Book:

Firewalls and Internet Security: Repelling the Wily Hacker , Second Edition Addison. Wessly

III SEMESTER			
NME 1 15UITN31	INTRODUCTION TO COMPUTERS		
Hrs / Week : 3	Hrs / Sem : 45	Hrs / Unit : 9	Credits : 2

UNIT I

Computers an Overview: Introduction to computers – Five Generations of modern computers- Classification of Digital computer Systems.- **Inside the computer:** Anatomy of digital computer – Computer Architecture.

UNIT II

Number system & Boolean Algebra: Number system – Boolean algebra and logic circuits. **Memory:** Memory units – Auxiliary Storage Devices Primary.

UNIT III

Input / Output: Input devices - Output Devices – **Computer Software & Software Development:** Introduction to computer software - Operating systems - Programming languages.

UNIT IV

Data processing and Networking: Data processing – Computer networks – Distributed data processing. **Telecommunications:** Introduction to Telecommunications. **Security:** Introduction to computer security – Cryptography - Computer Viruses, Bombs and worms.

UNIT V

Internet and Intranet: Internet and world wide web – Introduction to Intranets**. Multimedia and virtual reality:** Introduction to Multimedia - Multimedia tools - Introduction to virtual reality.

TEXT BOOK :

Alexis Leon and Mathews Leon. "Introduction to Computers" VIKAS publishing house Pvt Ltd, 1999.

IV SEMESTER		
NME 2	OFFICE AUTOMATION	15UITN41
Hrs / Week : 3	Hrs / Sem : 45 Hrs / Unit : 9	Credits : 2

UNIT I

Documentation Using MS-Word : Introduction to Office Automation, Creating & Editing Document, Formatting Document, Auto-text, Autocorrect, Spelling and Grammar Tool, Document Dictionary, Page Formatting, Bookmark.

UNIT II

Advance MS-Word : Advance Features of MS-Word [Mail Merge, Macros], Tables, File Management, Printing, Styles, linking and embedding object, Template.

UNIT III

Electronic Spread Sheet using MS-Excel : Introduction to MS-Excel, Creating & Editing Worksheet, Formatting and Essential Operations, Formulas and Functions, Charts,

UNIT IV

Advance features of MS-Excel : Pivot table & Pivot Chart, Linking and Consolidation, Database Management using Excel- Sorting, Filtering, Table, Validation, Goal Seek, and Scenario.

UNIT V

Presentation using MS-PowerPoint : Presentations, Creating, Manipulating & Enhancing Slides, Word Art, Layering art Objects, Animations and Sounds, Inserting Animated Pictures or Accessing through Object, Inserting Recorded Sound Effect or In-Built Sound Effect.

TEXT BOOK :

Microsoft Office – Complete Reference – BPB Publication

REFERENCE BOOK :

Learn Microsoft Office – Russell A. Stultz – BPB Publication.