

LOYOLA COLLEGE (AUTONOMOUS)
DEPARTMENT OF COMPUTER SCIENCE,
BACHELOR OF COMPUTER APPLICATIONS
(Effective from the Academic Year 2008-2009)

SEM	TYPE	COURSE CODE	COURSE TITLE	HRS	CR
I	MC	CA1503	Programming in C	5	5
	MC	CA1504	Programming in C- Lab	4	4
II	AR	MT2101	Mathematics for computer applications- Refer the Department of Mathematics for Syllabus	6	4
	MC	CA2502	Computer Organization and Architecture	6	6
III	AR	CO3104	Accounts and business applications- Refer the Department of Commerce for Syllabus	6	4
	AO	CA3201	Statistical methods- Refer the Department of Mathematics for Syllabus	6	4
	MC MC	CA3502 CA3503	Object Oriented Programming with C++ Object Oriented Programming with C++-Lab	6 6	6 6
IV	MC	CA4503	Visual Programming and RDBMS - Lab	6	6
	CL	CA4021	Visual Programming	3	2
	AO	CA4203	Resource Management Technique	6	4
V	MC	CA5504	Operating System	6	6
	MC	CA5505	Software Engineering	6	6
	MC	CA5506	Introduction to Data Communication	6	6
	SE	CA5402	Object Oriented Analysis And Design	3	2
	SE	CA5403	Web Design	3	2
	MC	CA5507	Web Design - Lab	6	6
VI	SK	CA6655	Dot net Technologies (or)	13	10
		CA6654	Advanced JAVA Programming		
	MS	CA6609	Web Programming with PHP and MySQL	5	10
		CA6609	Web Programming with PHP and MySQL-Lab	8	10
		CA6656	Project	4	5

MC – Major Core

SE–Subject Elective

SK-Skill Based

MS-Major Special

AR-Allied Required

AO-Allied Optional

GE-General Elective

CL-Computer Literacy

MC
I Year / I Semester

5 Hrs./Week.
5 Credits

CA1503 - PROGRAMMING IN C

Objective:

To obtain knowledge about the structure of the programming language C and to develop the program writing and logical thinking skill.

UNIT - I

Steps involved in computer programming-problem definition phase-Algorithm development- Flow charting- Efficiency of algorithm.C Fundamentals: character set-identifiers and keywords-data types-constants-variables-declaration-expression-statements. Operators and Expression : arithmetic operators-unary operators-relational and logical operators-assignment operators-conditional operators-library function.

Unit – II

Data Input and Output statements: getchar and putchar functions-scanf and printf function-more about scanf and printf function-gets and puts functions. Control Statements: if-else, while, do-while, for- Nested control structure-switch-break-continue-comma operator-goto statement.

Unit III

Functions: definition of function-accessing a function-function prototypes-passing arguments to a function-recursion. Program structure: storage classes-automatic variables-external variables-static variable. Arrays: definition of Array-processing an array-passing arrays to a function-multi dimensional arrays-arrays and string.

Unit IV

Pointers: Fundamentals – Pointer declaration – Passing pointer to function – array of pointers - Structure and Unions: definition of structure-processing a structure-user defined data type-structure and pointers-passing structure to functions-self referential structure-unions.

Unit V

Data files: Opening and closing a data file-creating a data file-processing a data file-unformatted data file.

Recommended books:

Unit- I

G. Micheael Schneider, Steven W. Weingart and David M, “An Introduction to Programming and Problem solving with Pascal”, Perlman Wiley Eastern Ltd, New Delhi, 1991.

Unit II, III, IV, V

Byron S. Gottfried, “Theory and Problems of Programming with C”, Tata Mcgraw-Hill Ltd, Second Edition, New Delhi.

Reference books:

1. “Programming in ANSI C” by E. Bala Gurusamy, Tata McGraw-Hill, Second Edition, New Delhi.

MC
I Year / I Semester

4 Hrs./Week.
4 Credits

CA1504 - PROGRAMMING IN C – LAB

Objective:

To develop skills in implementing algorithms through the programming Language C and to explore the features of C by applying sample problems.

1. MS-DOS EDITOR COMMANDS
Creating file(COPYCON, EDIT commands etc.) – Directory related commands(MD,CD,RD) – Disk related commands(FDISK, FORMAT, DISKCOPY, XCOPY etc.) – Other commands.
2. I/O Statements
Entering input data, writing output data, gets and puts functions – operators – expressions.
3. Control Statements
Implementation of programs using control statements.
4. Functions and Arrays
Accessing a function – passing arguments to a function – recursive function.
Processing an array – passing arrays to a function. – processing of strings.
5. Structure and File Handling
Accessing a structure – processing using structure – Opening and closing a data file – creating a data file – processing a data file – unformatted data files.
6. Data Structure
Accessing the address of a variable and accessing a variable through its pointer – Pointers and functions – Dynamic memory allocation – Types of linked lists – Basic list operations.

At least 4 programs must be given as lab exercise from topic 2 to topic 6.

MC
II Year/ III Semester

6 Hrs./Week
6 Credits

CA2502 - COMPUTER ORGANISATION AND ARCHITECTURE

Objective:

To gain knowledge about the architecture of computer and to understand the concepts of CPU, ALU Design, I/O Instruction format and different processors.

Unit I

Digital Logic Circuits (8 hrs.) - Digital Computers - Logic Gates - Boolean Algebra - Map Simplification - Product - of - Sums Simplification - Don't - Care Conditions - Combination Circuits - Flip-Flops - SR, D, JK, T, Edge-Triggered Flip-Flops - Excitation Tables.

Unit II

Digital Components (6 hrs.) - Integrated circuits - Decoders - NAND Gate Decoder - Decoder Expansion - Encoders - Multiplexers - Registers with Parallel Load - Shift Registers - Bi-directional Shift Registers with Parallel Load - Binary Counters with Parallel Load - Memory Unit - RAM - ROM - Types of ROMs.

Unit III

Basic Computer Organization: (10 hrs.) - Data types - Number Systems - Octal & Hexadecimal - Instruction codes - Operation codes - Stored Program Organization - Indirect Address - Effective Address - Computer Registers - Common Bus System - Computer Instructions - Instruction Formats - Instruction Set Completeness - Timing and Control - Clock Pulses - Hardwired Control - Micro programmed Control - Control Unit - Timing Signals - Instruction Cycle - Fetch and decode - Determine the Type of Instruction - Register - Reference Instructions - Memory - Reference Instructions - AND, ADD, LDA, STA, BUN, BSA, ISZ - Control Flowchart - Input-Output and Interrupt - I/O Configuration - I/O Instructions - Program Interrupt - Interrupt Cycle.

Unit IV

Complete Computer Description (5 hrs.) - Flowchart for Computer Operation - Design of a Basic Computer - Control Logic Gates - Control of Registers and Memory - Control of Single Flip - Flops - Control of Common Bus - Design of Accumulator Logic - Control of AC Register - Adder and Logic Circuit.

Unit V

Central Processor Organization: (13 hrs.) - Introduction - General Register Organization - Control Word - ALU - Example of Micro operations - Stack Organization - LIFO - Stack Pointer - Register Stack - PUSH & POP - Memory Stack - Stack Limits - Instruction Formats - Three Types of CPU Organization - Three, Two, One, Zero - Address, RISC Instructions - Addressing Modes - Mode Field - Implied, Immediate, Register, Register

Address, Autoincrement, Autodecrement, Direct Address, Indirect Address, Relative Address, Indexed Address and Base Register Addressing Modes - Numerical Example - Data Transfer and Manipulation - Set of Basic Operations - Data Transfer Instructions - Data Manipulation Instructions - Arithmetic Instructions - Logical and Bit Manipulation Instructions - Shift Instructions - Program Control - Status Bit Conditions - Conditional Branch Instructions - Numerical Example - Subroutine Call and Return - Program Interrupt - Program Status - Word - Supervisor Mode - Three Types of Interrupts.

Recommended Text Books:

1. M. Morris Mano, Computer System Architecture, Prentice Hall of India, III Edition.
2. Andrew S. Tanenbaum, Structured Computer Organization, Prentice Hall of India, IV Edition.

Reference Books:

1. William Stallings, Computer Organization and Architecture, Pearson Education, V edition.
2. Carl Hamacher, Computer Organization, Mc Graw Hill International, V Edition.

MC
II Year/ III Semester

6 Hrs./Week
6 Credits

CA3502 - OBJECT ORIENTED PROGRAMMING WITH C ++

Objective:

To gain the basic knowledge of object oriented programming concepts and to understand the detail idea of C++ streams ,templates and error handling concepts of C++ programming.

Unit I

Principles of Object Oriented Programming: Procedure Oriented Programming – OOP Paradigm-Basic concepts of OOP-Benefits of OOP-Object Oriented Language Applications of OOP. Beginning with C++, Tokens, Expressions and Control Structure. Functions in C++: Introduction-Main function prototyping-call by, return by reference-inline functions-default, constant arguments-Function overloading-friend and virtual functions.

Unit II

Classes and Objects. Constructors and Destructors. Constructors-Parameterized, Multiple Constructors-constructors with default arguments-Dynamic initialization of objects-copy, dynamic constructors- destructors.

Unit-III

Operator overloading and Type Conversions, Inheritance: Extending classes. Pointers, virtual functions and polymorphism, Managing console I/O Operations:

Unit-IV

C++ streams-C++ stream classes-Unformatted I/O Operations-Formatted console I/O Operations, Working with files: classes for file stream operations-opening and closing a file-EOF-File modes-File pointers-sequential I/O Operations-

Unit-V

Templates, Exception Handling.

Recommended Text Book:

1. E. Balagurusamy, Object-Oriented Programming with C++, TATA Mc Graw-Hill publishing.

Reference book:

1. R. Rajaram, Object-Oriented Programming and C++, A New Age Publication.

MC
II Year/ III Semester

6 Hrs./Week
6 Credits

CA3503 - OBJECT ORIENTED PROGRAMMING WITH C ++

Objective:

To gain knowledge about the object oriented programming concepts and C++ streams, templates and error handling concepts of C++ programming by implementing sample programs.

1. Classes and Objects
To create a class 'staff', to create different objects and to test the functioning of member functions, constructors and Destructors.
2. Arrays of Objects
To create Class 'student'
To create an array of students
To find out the student who get the first rank
3. Static Polymorphism: operator overloading
To perform complex number arithmetic or Matrix arithmetic
4. Inheritance
To create a class 'College'
To create another class 'department' by using 'college' as a base class
To verify the functions in the derived and base classes.
Also to verify by keeping the two functions with same name (one in the base class and another in derived class)
5. Dynamic Polymorphism: virtual function
To draw various shapes viz Square, Circle, Triangle and Rectangle.
6. Formatted I/O and File operation
To Test the functions and the manipulators using files
Mark sheet Processing or Payroll processing of Inventory Management
7. Templates and Exception Handling.

At least three programs should be given as lab exercise in each topic.

MC
II Year/ IV Semester

6 Hrs./Week
6 Credits

CA4503 - VISUAL PROGRAMMING AND RDBMS-LAB

Objective:

To gain knowledge about the DML, DDL operations and to develop a Database with enhanced models and Techniques and to understand about RDBMS, Object oriented Databases and issues.

1. Building simple application using form object.
2. Working with intrinsic controls.
3. Application with menus.
4. Application with MDI.
5. Queries Using DDL, DML, TCL.
6. Queries using
 - a. AND, OR, NOT operation
 - b. Union, Intersection, Projection and Join Operation
 - c. Sorting and Grouping
7. Nested queries using SQL
8. Built-in functions of SQL
9. Update operations using SQL
10. Use of SQL forms
11. Use of indexes, creating view and querying in views
12. Income Tax calculation
13. Pay -roll system
14. Inventory Processing System
15. Railway / Airway Reservation System.
16. Library Management System.

CL
II Year/ IV Semester

3 Hrs./Week
2 Credits

CA4021 - VISUAL PROGRAMMING

Objective:

To gain knowledge about the DML, DDL operations and to develop a Database with enhanced models and Techniques and to understand about RDBMS, Object oriented Databases and issues.

Unit I

Introduction to Visual Basic: Getting started in Visual Basic – Adding an event procedure – Adding controls – Adding additional event procedures; Data and Operations; Data values and operators – Variables and declaration statements – Assignment statements – Using intrinsic functions.

Unit II

Controlling i/o: Interactive user input –Formatted output – Named constants: Selection; Repetition structures; Sub procedures and functions; Structured data: 1-Dimensional arrays – Control arrays.

Unit III

Basic graphical user interface concepts; Advanced graphical user interface concepts; Windows common dialogs; The chart and grid controls; The timer, shape, line and toolbar controls; Tree views and list views.

Unit IV

Oracle sql: DDL, DML, DCL operations – integrity constraints – string functions – number functions – data arithmetic – transformation functions – grouping and ordering data – subqueries – joins – union, intersect and minus – indexes – clusters – views – sequences – synonym – privileges – grant and revoke permission – locks- pl/sql structure – conditional and unconditional controls – loops – cursors – exceptions.

Unit V

Database programming with VB: Record set – Data control – Understanding relational concepts – Using the visual data manager – Entering data – Validating data – Accessing fields and record sets – using SQL statements – Advanced data bound control – mapping databases – ADO objects.

Recommended Text Books:

1. Gary Bronson, Introduction to programming Using Visual Basic 6, Dreamtech publications, II Edition.
2. Treitch, Visual Basic Oracle 8 Programmer's Reference, Wrox publication.

Reference books:

1. Deitel & Deitel, Visual Basic 6 How to Program, Pearson Education.
2. Nick Showdon, Oracle Programming with Visual Basic, Sybex publication.

AO
II Year/ IV Semester

6Hr/Week
4Credits

CA4203- RESOURCE MANAGEMENT TECHNIQUE

Objective: To develop skills for decision making.

Unit I

Linear Programming: Formation of LPP-Methods of solution-Graphical and simplex method of solution

Unit II

Transportation and Assignment problems: Initial solution-Methods of improving the initial solution-Travelling salesman problems

Unit III

Sequencing and scheduling problems: Job sequencing-n-jobs through two machines, n-jobs through three machines, two jobs through m machines PERT and CPM techniques-Critical path- Normal and crash time

Unit IV

Inventory problems: Deterministic model costs-decision Variables-Economics order quantity-Instantaneous receipts of goods with and without shortage-Quantity discount-Inventory systems-safety level (ROL), Recorder point (ROP) determination.

Unit V

Maintenance and replacement problems: Models for routine maintenance and preventive maintenance decision – Replacement models that deteriorate with time and those fail completely.

Books for Study

1. Operations Research- An introduction by Taha H.A.
Macmillan, international students , Edition, 1980.
2. Introduction to operations research by Billy B. Gillet
TMH Publishing Company Ltd., 1982
3. Operation Research and Quantitative analysis by P. K Gupta and Manmohan
S.Chand 7 Company Ltd., 1990
- 4.Operation Research by S. Hamblin and Stevens Jr.
McGraw-Hill Company, 1974.

MC
III Year/ V Semester

6 Hrs./Week
6 Credits

CA5504 - OPERATING SYSTEM

Objective:

To gain knowledge about operating system, memory management and scheduling concepts and to study about the basics of OS, process management, Synchronization, memory management and File management.

Unit I

Introduction: What is an operating system – operating system concepts – system calls – operating system structure.

Unit II

Processes and Threads: Process – Inter process communication – Scheduling; Deadlocks: Resources – Introduction to deadlocks – Deadlock detection and recovery – deadlock avoidance – Deadlock Prevention.

Unit III

Memory management: Basic memory management – Swapping – Virtual Memory – Page replacement algorithms – Implementation Issues – Segmentation.

Unit IV

Input / Output: Principles of I/O hardware – Principles of I/O software – I/O software layers – Disks – Character oriented terminals – Graphical user interfaces – Network terminals.

Unit V

File Systems: Files – Directories – File System Implementation – Example file systems – Case study 1: Unix and Linux; Case Study 2 : Windows 2000.

Recommended Text Book:

1. Andrew S.Tanenbaum, Modern Operating Systems, Pearson Education, II Edition.

Reference Books:

1. A.Silberschatz et al, Operating System Concepts, John Wiley, VI Edition.
2. H.M.Deitel, An introduction to Operating System, Addison Wesley, II Edition.
3. Godbole, Operating Systems.

MC
III Year/ V Semester

6 Hrs./Week
6 Credits

CA5505 - SOFTWARE ENGINEERING

Objective:

To gain knowledge about the methodologies behind the software engineering and testing and to better understand the software development life cycle.

Unit I

Introduction: Definition of software and software engineering – Software myths – Software Engineering paradigms: Linear Sequential Model & Prototyping Model
Software Project Management – Software Metrics – Software Cost Estimation – Software Project Planning.

Unit II

Software Requirement Analysis: Software Risks – Software Configuration Management
System Analysis – Modeling the System Architecture – System Specification – Fundamentals of Requirement Analysis – Software Prototyping – Prototyping method and tools specification – Software requirements Specifications

Unit III

Structured Analysis: Introduction – the elements of the analysis model – data objects, attributes and relationships – Cardinality and Modality – ERD – DFD – Classical Analysis Methods : DSSD, JSD, SADT.

Unit IV

Software Design: Software Design and Software Engineering – Design and Software Quality – Evolution of Software Design – Design Principles. Design Concepts, Abstraction, Refinement, Modularity – Effective Modular Design, Functional Independence, Cohesion, Coupling.

Unit V

Software Testing Methods: Software Testing Fundamentals – White Box Testing – Black Box Testing – Debugging – Software Quality: McCall's Quality Factors

Recommended Text Book:

1. Roger S. Pressman, Software Engineering – A Practitioner's Approach, McGraw Hill, 4th Edition

Reference books:

1. Richard Fairley , Software Engineering – Design Reliability and Management
2. Sommerville, Software Engineering, Pearson Education, 7th Edition

MC
III Year/ V Semester

6 Hrs./Week
6 Credits

CA5506 - INTRODUCTION TO DATA COMMUNICATION

Objective:

To introduce the basic concepts of networks and to give a clear understanding of encoding and data transmission techniques and also exposure to errors in data transmission and rectification is dealt with.

Unit I

Introduction to Data Communication- Networks – Protocols and Standards-Standards Organizations. Basic Concepts: Line configuration – Topology- Transmission Mode- Categories of Networks – Internet-works.

Unit II

The OSI model: The model – Functions of the layers, Signals: Analog and Digital – Aperiodic – periodic Signals – Simple analog signals – Digital Signals.

Unit III

Encoding – Digital -to- Digital – Analog-to-Analog-Transmission of Digital Data: Digital Data Transmission – DTE – DCE Interface - EIA232 Standard.

Unit IV

Modems: Transmission Rate- Modem Standards – Transmission Media: Guided Media – Unguided Media

Unit V

Multiplexing: Many-to-One, One-to-Many – Types – Multiplexing Application - The Telephone System, Error Detection and Correction: types of Errors – Detection – Error Correction.

Recommended Text Book:

1. Behrouz Forouzan, Introduction to Data Communications and Networking, Tata McGraw Hill Edition 1999.

Reference book:

1. William Stallings, “Data & Computer Communications”, Sixth Edition, Pearson Education, 2001.
2. Fred Halsall, “Data Communications, Computer Networks and Open Systems”, Addison Wesley, 1995.

SE
III Year/ V Semester

3 Hrs./Week
2 Credits

CA5402 - OBJECT ORIENTED ANALYSIS AND DESIGN

Objective:

To learn the concept of Object-Oriented Methodology for developing a software application and to gain familiarity with Object Oriented Analysis and Design.

Unit I

Object Basics – Object Oriented methodologies: Introduction, The Unified approach – UML.

Unit II

Use Case Models – Object Analysis – Identifying Object relationships – Attributes – Methods – Case Studies.

Unit III

Design Processes – Design Axioms – Class design – Object Storage: Object Oriented database management systems, Object relational systems, Designing access layer classes. Case Studies.

Unit IV

User interface design – View Layer Classes – Micro level processes – View Layer interface - Case Studies.

Unit V

Object orientation on testing – Test cases – Test plans – Continuous testing – Debugging principles – System usability – Measuring user satisfaction – Case studies.

Recommended Text Book:

1. Ali Bahrami – Object Oriented Systems Development., McGraw – Hill International Edition – 1999.

Reference Books:

1. Booch, Grady; Jacobson; Rumbaugh, “The Unified Modeling Language User Guide”, Addison – Wesley, Pearson Education.
2. Terry Quatrani, “Visual Modeling with Rational Rose and UML”, Addison – Wesley, Pearson Education, Edition III, '03.
3. Patrick W. Sheridan, Jean M. Sekual, “Interactive UML Development using VB 6.0”, BPB Publication.
4. Martin Fowler, “UML Distilled”, Addison – Wesley, Edition III, '04
5. Kurt Bittner et al, “Use Case Modeling”, Addison – Wesley, '03.

SE
III Year/ V Semester

3 Hrs./Week
2 Credits

CA5403 - WEB DESIGN

Objective:

To impart knowledge about the technologies and their applications and to understand the basics of web designing and to use open source tools.

Unit I

HTML: Basic structure – Traditional Text Format- using forms –tables- frames and framesets-image with HTML-creation lists and quotations-URL and Linking-Style Sheets: HTML cascading style sheets-Inline styles-Creating style sheets with the style elements- Building a web page.

Unit II

JavaScript: Introduction to scripting –operators: logical-Increment and decrement operators –Control structures- Functions: Definition-scope rules-recursion-Arrays: Declaring arrays-passing arrays to functions-sorting arrays-object: Math object-string Object-Date object-Boolean object and Number object.

Unit III

VBScript: Adding VBScript to web pages-Handling non supporting browsers-working with variables-arrays-constants-objects and VBScript-Linking VBScript with objects-validity using forms

Unit IV

XML-XML overview- features-HTML XML –processing instructions-Applications of XML- COMMENTS-XML names spaces-Schema- style sheets: Cascading style sheets (css) Extensible Style Language (XSL)-Document object model (DOM)-DOM methods-SAX

Unit V

Multi media authoring tools: Photoshop: Image Fundamentals- Defining Colors- Painting and Editing –Retouching- Corrective Filtering- Full –court filtering- Layers-The wonders of lend modes- Printing Images.
Flash MX: Interface fundamentals Drawing in Flash –Working with Text-Time line Animation fundamentals -Applying layer types- Adding sound.

Recommended Text Book:

1. H.M Deitel, T.R. Nieto, "Internet & World Wide Web How to program", second Edition, prentice Hall of India pvt. Ltd, New Delhi.2003
2. Deke Mc Clelland, "Photoshop 6 for windows Bible", IDG Books India (p) LTD.2001.
3. Robert Reinhardt & Snow Dowd, "Macromedia Flash MX Bible", Wiley publishing inc. 2002

Reference Book:

1. Deitel, Nieto, Lin, Sadhu, "XML HOW TO PROGRAM" Pearson Education,2001

MC
III Year/ V Semester

6 Hrs./Week
6 Credits

CA5507 - WEB DESIGN-LAB

Objective:

This course highlights the basic concepts of HTML and helps the student to equip with the programming skills in implementing and developing web based applications.

1. Create Application form using various text formats.
2. Create LOYOLA COLLEGE website using HTML tags.
3. Create Mark sheet preparation using HTML.
4. Create style sheets with the style elements.
5. Create calculator format using java script.
6. Create Login format using arrays
7. String manipulation-using functions.
8. Add a simple script using Click event
9. Calculate total amount for the departmental store products.
10. Create Employee details using schemas.
11. Create our department details using CSS.
12. Create Payroll system using XSL.
13. Paint an image.
14. Change the color of the old image to new image.
15. Filter effects.
16. Working with different layers.
17. Creating a banner – Typography.
18. Draw an image in flash.
19. Animation – text and image.
20. Animation with different layers.
21. Adding sounds
22. Working with layers and frames.

SK
III Year/ VI Semester

15 Hrs./Week
10 Credits

CA6655 – DOT NET TECHNOLOGIES

Objective:

To gain knowledge about the methodologies behind VB.Net and ASP.Net and helps the students to develop Dot Net based application using ADO.NET and SQL Managed Provider-OLEDB Managed Provider.

Unit I

Introduction to .NET Framework, Introducing VB.NET: New Object Oriented Capabilities- Inheritance- Parameterized Constructors- Overriding- Overloading- Shared Members- Events- Exception Handling-.NET Framework Class Hierarchy-The System Namespace. File I/O: Using the System.IO Hierarchy- *Streaming text in and out of Text Files*- Object Serialization and Deserialization.

Unit II

Introduction to ADO.NET: Comparison between ADO & ADO.NET—The difference between Connection Model & Disconnected Model – difference between the DataSet and RecordSet- The Dataset Model. Accessing Data using ADO.NET: dataset-DataAdapter-DataRelation. The two Managed Providers: SQL Managed Provider-OLEDB Managed Provider. The ADO.NET Object Model: OleDbConnection /SqlConnection-OleDbCommand/SqlCommand-OleDbDataReader/SQLDataReader-OleDbDataAdapter/SQLDataAdapter-The DataSet. Using the Binding Manager to bind controls to the data - Working with Master-Detail relationship.

Unit III

Differences between ASP and ASP.NET. ASP.NET Web Forms: The code behind Web Form-Separations of content & Business logic-Life Cycle of a Web Form Page-Stages in Web Form Processing

Unit IV

ASP.NET Server Controls. Web Forms Server Controls Recommendation: Validation Controls-Controls that incorporate logic to validate user inputs like a required field, between ranges, or pattern matching. ASP.NET Data Access: Data Binding Server Controls-Viewing Data Collections in a Grid. ASP.NET Caching Mechanism for caching Dynamic response data. Page Output Caching.

Unit V

WebServices: Introduction to webservice-Architecture of Web service: Universal Discovery Description and Integration-Web Service Description Language –Accessing webservice using different Clients.

Recommended Text Books:

1. Chris Ullman, John Kauffman, Beginning ASP.NET 1.1 with VB.NET 2003, Wrox Publication
2. ADO.NET Professional, Wrox Publication
3. Alex Homer, Dave Sussman, Professional ASP.NET 1.1, Wrox Publication
4. .NET Framework, OREILY Publication.

Reference books:

1. Crouch, ASP.NET and VB.NET Web Programming, Pearson Education
2. Richard Blair, Mathew Renolds, Beginning VB.NET 2003, 3rd edition, Wrox Publication
3. Bill Evjen, Billy, Hollis, et al, Professional VB.NET 2003, 3rd edition, Wrox Publication
4. Deitel and Deitel, Visual Basic.NET How to Program, Pearson Education, 2nd edition Greg Buczek, ASP.NET Developer's Guide, Tata McGraw-Hill, 2002.

.NET PROGRAMMING LAB

1. Dynamic Polymorphism
2. Exception Handling
3. File Handling
4. Serialization
5. Array list
6. Fetch data from database using disconnected architecture
7. Fetch data from database using data binding and navigation
8. Fetch data from database using active connection
9. Login page
10. Display number of bits
11. Register page
12. Combo box
13. Output caching
14. Fetch data from XML
15. Web service to perform calculations
16. Client application connected to web services to perform calculation
17. Web service to display data structure
18. Web application using web service data

SK
III Year/ VI Semester

15 Hrs./Week
10 Credits

CA6609 - ADVANCED JAVA PROGRAMMING

Objective:

To obtain the basic knowledge of object oriented programming, concepts of basic JAVA ,advanced JAVA .Server side scripting(JSP) and to understand the detail idea of JAVA programming.

Unit I

Fundamentals of java: Introduction to java- Features of java- basic fundamentals- Access controls-Static and fixed methods-Inner classes-String class-Inheritance-Overriding methods- Using Super- Abstract classes-Packages-Interfaces-Exception Handling-Threads.

Unit II

Applet and AWT: Applets-Events-AWT components-Layouts-Graphics using Swings (JFC)-I/O Streams and File Streams- Introduction about Util package.

Unit III

Servlet and JSP programming: Servlet API-Servlet Life cycle-Html to Servlet Communication-Introduction to JSP-JSP tags-Sessions.

Unit IV

JDBC and Java networking: Database Drivers-SQL package-Networking in java-Sockets-Creating RMI server-Client-Interface-Networking using RMI-JDBC.

Unit V

Enterprise java Beans (EJB): Introduction to EJB-Deployment Descriptors-Session java Bean-Entity java bean-Message-Driven Beans.

Recommended Text Book::

1. Cay.S.Horstmann, Gary Cornell Addison Wesley, "Core java 2 vol.1-Fundamentals" by, 1999.
2. Kathy Sierra & Bert Bates, "Head First Java", O'REILLY publications.
3. P.Naughton and H.Schildt, "Java 2(Complete Reference)" by fourth Edition.
4. Kathy Sierra & Bert Bates, "Head First Servlets & Jsp" by O'REILLY publications.

Reference book:

1. Jim Keogh, J2EE (Complete Reference)-TMH.
2. Kathy Sierra & Bert Bates, "Head First Ejb", O'REILLY publications.

ADVANCED JAVA PROGRAMMING

- 1) Inheritance and Polymorphism
- 2) Packages and interfaces
- 3) Exception Handling
- 4) Threading and Multithreading
- 5) Streams and String Classes
- 6) Applet, layouts and AWT Components
- 7) Swing components.
- 8) Util packages
- 9) Servlets and JSP
- 10) Session Tracking
- 11) Cookies.
- 12) Java Bean components
- 13) Applications in RMI
- 14) Connecting Servlet, RMI database using JDBC
- 15) Simple EJB components

Software needed for this:

JSDK

Tomcat server

BEA Web logic server

MS
III Year/ VI Semester

5 Hrs./Week
10 Credits

CS/CA6609 – WEB PROGRAMMING WITH PHP AND MYSQL

Objective: To earn skill set to develop online information system using the open sources PHP and MySQL.

Unit-I Introduction:

Introduction- open source-PHP – history- features-variables- statements- operators-conditional statements-if-switch-nesting conditions-merging forms with conditional statements-loops-while-do-for – loop iteration with break and continue.

Unit - II Arrays and Functions:

Arrays: Creating an array- modifying array-processing array-grouping form with arrays- using array functions- creating user defined functions- using files- sessions- cookies- executing external programs- Creating sample applications using PHP.

Unit –III Database Management System:

Components of Database system-Definition and benefits of database-Data Independence-Three level of database architecture-Database Management system-Client server architecture-Distributed processing-Domains-Relations-Integrity constraints-Candidate keys-Primary keys-Foreign keys-Functional dependency(Basic definition)-Normal Forms (1NF, 2NF, 3NF, BCNF)-ER model – OOAD model.

UNIT-IV MySQL:

Effectiveness of MySQL -MySQL Tools-Prerequisites for MySQL connection- Databases and tables- MySQL data types-Creating and manipulating tables- Insertion, updation and deletion of rows in tables -Retrieving data- Sorting and filtering retrieved data -Advanced data filtering-Data manipulation functions- Aggregate functions -Grouping data- Sub queries- Joining Tables- Set operators- Full text searching.

UNIT-V PHP with MySQL:

Working MySQL with PHP-database connectivity- usage of MYSQL commands in PHP, processing result sets of queries- handling errors-debugging and diagnostic functions- validating user input through Database layer and Application layer- formatting query output with Character, Numeric, Date and time –sample database applications.

Text Books:

1. VIKRAM VASWANI, "PHP and MySQL", Tata McGraw-Hill, 2005
2. BEN FORTA , "MySQL Crash course " SAMS, 2006.
3. C.J. DATE, "An Introduction to Database Systems", Addison Wesley, Sixth Edition.
4. Ramesh Elmasri and Shamkant B Navathe, " Fundamentals of DataBase Systems", Pearson Education, Third Edition.

Reference Books:

1. Tim Converse, Joyce Park and Clark Morgan, "PHP 5 and MySQL", Wiley India reprint, 2008.
2. Robert Sheldon, Geoff Moes, "Beginning MySQL", Wrox, 2005.
3. Alexis Leon and Mathews Leon, "Database Management Systems", Vikas, 2008.

MS
III Year/ VI Semester

8 Hrs./Week
10 Credits

CS/CA6610 – WEB PROGRAMMING WITH PHP AND MYSQL - LAB

Objective:

To develop applications in PHP using various concepts like arrays, udf's, Sessions and make the students to understand and to establish the connectivity between PHP and MySQL and develop programs to add records, retrieve records and delete records from a table.

1. Creating simple webpage using PHP
2. Use of conditional statements in PHP
3. Use of looping statements in PHP
4. Creating different types of arrays
5. Usage of array functions
6. Creating user defined functions
7. Creation of files
8. File manipulation using PHP
9. Creation of sessions
10. Creation of cookies
11. Creating simple applications using PHP
12. Creating simple table with constraints
13. Insertion, Updation and Deletion of rows in MYSQL tables
14. Searching of data by different criteria
15. Sorting of data
16. Demonstration of joining tables
17. Usage of subqueries
18. Usage of aggregate functions
19. Working with set operators
20. Working with string, numeric and date functions
21. Database connectivity in PHP with MySQL
22. Validating Input
23. Formatting the Output.

SAMPLE APPLICATIONS USING PHP AND MYSQL