VI-Semester B. E. (Computer Science & Engineering)

Course Code: CS601
Title of the Course: Java Programming

Course Scheme					Evaluation Scheme (Theory)				
Lecture	Tutorial	Practical	Periods/week	Credits	Duration of paper, hrs	MSE	IE	ESE	Total
04	01	--	05	04	03	10	10	80	100

Unit	Contents	Hours
I	Object oriented programming concept, comparing JAVA with C, JAVA programming language syntax, variables, data types, statements and expressions, control statements ifelse, for, while and do-while loops, switch statements, named structures, functions , parameter passing, static modifier, console programming.	09
II	Features of JAVA: classes and interfaces, Threads and multithreaded programming, Synchronization of threads, dead locks, Exception handling, Introduction to packages, math package, lang package, util package.	09
III	Applets programming: Events, Even driven programs, handling events like buttons, mouse, keyboards etc., Applets and Applets package, fonts, colors, Graphics, Images, Sounds, AWT components, Layout managers, writing event driven programs using components.	09
IV	Streams: I/O in JAVA, I/O packages, handling files random access files, chaining streams.	09
V	Network programming: net package, TCP/IP programming, UDP programming, client/server model implementation, getting information from internet. Advanced concepts of JAVA: CORBA, BEANS, JAVADOC ,RMI, Servelets.	09
	Total	45

Text Books:
1. Introduction to Java programming:, Daneal/Yong PHI
2. Introduction to Java Programming, a primar, Balaguruswamy.

Reference Books:
1. The Complete Reference- JAVA 2, Third Edition , by Patrick Naughton, TMH Publications
2. Java 2 Complete Reference – 5th Edition – Herbert Schildt (TMGH).
3. Object oriented programming with JAVA – E. Balguruswamy

VI-Semester B. E. (Computer Technology)

Course Code: **CS602**
Title of the Course: Microprocessors and Microcontrollers

Course Scheme					Evaluation Scheme (Theory)				
Lecture	Tutorial	Practical	Periods/week	Credits	Duration of paper, hrs	MSE	IE	ESE	Total
03	01	--	04	03	03	10	10	80	100

Unit	Contents	Hours
I	**Introduction to 16-bit Microprocessor 8086:** Architecture of 16 bit Microprocessor 8086 and 8088, concept of pipelining and memory segmentation , logical address, offset address and physical address, Bus Interface Unit (BIU),Execution Unit (EU), segment registers, Pin functions, Minimum and Maximum mode of operation, addressing modes, Instruction set, assembler directives	09
II	**Programming, Interrupt Structure and Memory Interfacing:** Assembly Language programming, .Stack structure of 8086, Interrupts and interrupt service routines, processing of interrupt, Internal and External interrupts, Interrupt Priorities, Memory Interfacing Concepts, Interfacing of 8086 Microprocessor with memory ICs, Modes of operation of 8255, Interfacing of 8255 with 8086,Interfacing of ADC & DAC	09
III	**Programmable Peripheral Devices:** Programmable Interval Timer 8254: Architecture and Signal Descriptions, Operating Modes, Programming and Interfacing, Architecture, organization operation & interfacing of 8259, ICWs, OCWS, cascading 8279-keyboard display words.	09
IV	**Microcontroller 8051:** Introduction to 8051 family architecture, pin diagram, operation, ports, addressing modes, internal & external memory, SFR, flags, organization, counters and timers, serial communication.	09
V	**Programming with 8051:** 8051 Instruction set, interrupts, programming exercises for interfaced with keyboard, LED matrix, time delays, serial communication.	09
	Total	45

Text Books :
1. Advanced Microprocessor and Peripherals- A.K.Ray and K.M. Bhurchandi, Tata McGraw Hill.
2. The 8051 Microcontroller, architecture, programming and application,-- Kenneth J. Ayala**,** Western Calarina University.

Reference Books :
1. Microprocessor and Interfacing, Programming & Hardware- Douglas V Hall, 2nd Edition, Tata McGraw Hill .
2. Microcomputer systems 8086/8088 family, Architecture, Programming and
3. Design - Yu-Cheng Liu & Glenn A Gibson, 2nd Edition- July 2003, Prentice Hall of India
4. The 8051 microcontroller and embedded systems, Volume 1 Muhammad Ali Mazidi, Janice Gillispie Mazidi.
5. The 8086/8088 Family Design, Programming & Interfacing- John Unfenberck, PHI learning private Ltd

VI-Semester B. E. (Computer Science & Engineering)

Course Code: CS603
Title of the Course: Computer Graphics

Course Scheme					Evaluation Scheme (Theory)				
Lecture	Tutorial	Practical	Periods/week	Credits	Duration of paper, hrs	MSE	IE	ESE	Total
03	01	--	04	03	03	10	10	80	100

Unit	Contents	Hours
I	Introduction: Introduction to Computer Graphics & its application. interactive computer graphics. Overview of Graphics System. Graphics Input and Output Devices, Display Devices: Common display devices, storage Tube, Calligraphic, Raster refresh display,CRT, LCD, LED Technology, Basic Concept: Refresh, Flicker, Scan Rate, Screen Size, Aspect Ratio, Interlacing and Non-Interlacing techniques. Raster color graphics, Frame Buffer, Addressing a Raster. Adapters: Basic Function, Video BIOS, Video RAM, operating Modes, Introduction to real time scan conversion, cell and runlength encoding. Introduction & basic function of MGA, CGA, VGA, EGA, SVGA.	09
II	Point Pixel Plotting. Line Generation Algorithms: DDA, Bresenham's Algorithm, Bresenham's Parallel Line generation algo. For multiprocessor system, thick line generation, dotted & dashed line generation algo. Circle Generation: Bresenham's Algorithm, Trigonometric method. Aliasing & Antialiasing techniques. Polygons, Polygon representation, Polygon Filling: Simple ordered edge list algorithm. Edge fill algorithm, Edge flag algo, seed fill algo.	09
III	Graphics Primitives: Display devices, Normalized device coordinates, display files structure. Segments: The segment table, segment creation, closing a segment, detecting a segment, renaming a segment, visibility, image transformation, saving and showing segments, other display file structures, some master techniques. Transformation 2-Dimension Transformation: Basic Transformation: Scaling, Rotation, Translation, Matrix representation, Homogeneous Coordinates & Composite transformations, rotation about an arbitrary point, other transformation: Reflection Shear.	09
IV	Windowing & Clipping: The viewing transformations. Line Clipping: Sutherland-Cohen algo, Midpoint Subdivision algo, Cyrus Beck algo. Polygon Clipping: Sutherland-Hodgman algo.	09
V	3-Dimension Transformation - 3D geometry, 3D primitives, Scaling, Translating, Rotation about an arbitrary axis, parallel Projection, Viewing Parameters, Special Projections. Curves: Bezier & B-spline Curves.	09
	Total	45

Text Book/s:

1. Procedural Elements for Computer Graphics : David F. Rogers, Me Graw Hill.
2. Principles of Interactive Graphics : Newman Sproull, Me Graw Hill, International Student Publication.
3. Mathematical Elements fro Computer Graphics by David F Rogers and Adams

Reference Book/s:

1. Computer Graphics 2nd edition : Donald Heam, M. Pauline Beker, Prentice Hall of India
2. Computer Graphics A programming approach : Steven Harrignton,Mc Graw Hill, International student edition.
3. IBM PC and PS/2 Graphics Hand Book : E. Keja & Johns, Asian Edition.
4. Micro Computer Hardware Design : D. Protopapus, Prentice Hall Editions.

VI-Semester B. E. (Computer Science & Engineering)

Course Code: **CS604**
Title of the Course: Web Technology

Course Scheme					Evaluation Scheme (Theory)				
Lecture	Tutorial	Practical	Periods/week	Credits	Duration of paper, hrs	MSE	IE	ESE	Total
03	01	--	04	03	03	10	10	80	100

Unit	Contents	Hours
I	**Introduction to XML:** What is XML, XML verses HTML, XML terminology, XML standards, XML syntax checking, The idea of markup, XML Structure, Organizing information in XML, Creating Well-formed XML, XML Namespaces. DTD- Introduction to DTD, Document Type Declaration, Element Type Declaration, Attribute Declaration, Conditional Section, Limitations of DTD, **Parsing XML:** Introduction to Parser, Parsing approaches, JAXP, JAXP and SAX, JAXP and DOM.**, Extensible Stylesheet Language(XSL):** Introduction to XSL, overview, XPATH, XSLT – templates, creating elements and attributes, looping and sorting, conditional processing, defining variables.	09
II	**Introduction to Servlet:** History of web applications, support for web application, power of servlet, a Servlet's job, basic servlet code, configuration of apache tomcat server, set up Development Environment, Compiling and Deploying Servlet, Web Application - directory structure, Deployment descriptor, Assigning custom URLs to servlet., **Structure of Servlet:** HTTP basic, The servlet API, Page Generation, The Servlet Life Cycle – The Service method, doGet and doPost methods, Init method, destroy method, The Single Thread Model Interface, **Retrieving Information:** Servlet Init Parameters and Parameter Names, Information about server, Context Init Parameters, The Client Information – information about client machine, Restricting Access, Information about user, The Request – Request Parameter, path information, Serving files, Serving Resources, Request Headers, Handling Post Request,	09
III	**Creating Response in Servlet:** The Structure of response, sending normal response, using persistent connection, response buffering, controlling response buffer, status codes, setting status code, HTTP headers, setting HTTP headers, Redirecting request, client pull, configuring error pages, logging, Exceptions. **Session Management in servlet:** Session tracking**,** Session tracking Mechanisms – Hidden Form Fields, URL Rewriting, cookies, Session Tracking APIs, session life cycle, Setting session timeout, life cycle methods, manually invalidating session, Session ID, non cookie Fallbacks. **JSP Application Development**: Generating Dynamic Content, Using Scripting Elements Implicit JSP Objects, Conditional Processing - Displaying Values Using an Expression to Set an Attribute, Declaring Variables and Methods Error Handling and Debugging Sharing Data Between JSP pages, Requests, and Users Passing Control and Data between Pages - Sharing Session and Application Data.	09
IV	**Database Access:** Database Programming using JDBC, Studying Javax.sql.* package, Accessing a Database from a JSP Page, Application - Specific Database Actions, Deploying JAVA Beans in a JSP Page, Introduction to struts framework.	09
V	**Introduction to ASP.NET:** The Evolution of Web Development, Important facts about ASP.NET, The Code Model, Web Project. **Web Forms:** Page Processing, Web Form Processing Stages, The Page as Control Container, The Page Class. **Server Controls:**Types of Server Controls, HTML Server Controls, Web Controls, List Controls, Input Validation Controls. **ASP.NET Application:** Anatomy of ASP.NET application, global.asax Application file, ASP.NET Configuration. **Data Access – ADO.NET Fundamentals:** ADO.NET	09

Architecture, The Connection Class, The Command and DataReader Classes. Data Binding – Basic Data binding, Data source Control, TheSqlDataSource. **Introduction to PHP scripting language:** Basics of PHP script, combining HTML and PHP, variables, data types, static and predefined (super-global) variables, operators, expressions, flow & looping control .		
	Total	50

Text Books:
1. XML and Related Technologies – Atul Kahate , Pearson Education.
2. Java Servlet Programming – Jason Hunter, SPD O'REILLY.
3. Core-Servlet and Java Server Pages Volume -1 2nd Edition – Marty Hall, Larry Brown, Pearson Education.
4. Pro ASP.NET 3.5 in C# 2008, Matthew MacDonald, Wiley-APRESS publication.
5. Beginning PHP5, WROX Publications

Reference Books:
1. The XML Handbook – Charls Goldfarb.
2. Learning XML – Erik Ray, SPD O'REILLY 2nd Edition.
3. XML in Nutshell – Elliotte RustyHarold, SPD O'REILLY, 3rd Edition.
4. Head First – Servlet and JSP - Bryan Basham, SPD O'REILLY, 2nd Edition.

VI-Semester B. E. (Computer Science & Engineering)

Course Code: CS605
Title of the Course: Principles of Management

Course Scheme					Evaluation Scheme (Theory)				
Lecture	Tutorial	Practical	Periods/week	Credits	Duration of paper, hrs	MSE	IE	ESE	Total
03	00	--	03	03	03	10	10	80	100

Unit	Contents	Hours
I	Nature and Functions of Management, Management yesterday and today, Planning and Decision making.	09
II	Management Information System: Introduction, Conceptual Foundations, Information System Requirement.	09
III	Marketing Management: Marketing concept, Indian Marketing Environment, Market segmentation, Market Planning, International Marketing, Financial Management	09
IV	Human Resource Management: Human Resource Planning, Recruitment, Selection, Training and development, Security, Safety and Health.	09
V	Organization Behavior: Organization Structure and design. Designing Effective Organization, Managing Job Stress, Organization Development.	09
	Total	45

Text Hooks:

1. Principles of Management , P C Tripathi and P N Reddy
2. Management Information System, Gordan Davis and H. Olison Tata McGraw Hill Pub.
3. Human Resources and Personal Management, William Werther and Keith Davis
4. Marketing Management, V S Ramaswamy and S Namakumari
5. Organization Behavior, High Arnold and Daniel Feldman Tata McGraw Hill
6. Financial Management, Khanna.

VI-Semester B. E. (Computer Science & Engineering)

Course Code: CS606
Title of the Course: Java Programming

Course Scheme					Evaluation Scheme (Laboratory)		
Lecture	Tutorial	Practical	Periods/week	Credits	TW	POE	Total
--	--	01	03	02	25	25	50

Practical: Students should perform 10-12 Experiments from the given list.

List of Practical's:
1. Programs illustrating overloading and overriding method in JAVA.(Use any application)
2. Programs illustrating the implementation of various forms of inheritance (Ex. Single, Hierarchical, Multilevel inheritance etc.,).
3. Programs which illustrates the implementation of multiple inheritance using interfaces in JAVA.
4. Programs which illustrates the Implementation of Inheritance by Method overriding, Super constructor and super keyword, abstract class (Use any application)
5. Programs which illustrate the manipulation of strings:1) Sorting an array of strings in ascending order. 2) Frequency count of words and characters in a text file. Etc.,
6. Programs for sorting and searching a list of elements.
7. Programs for addition and multiplication of matrices.
8. Programs to create packages in JAVA.
9. Programs to create multiple threads in JAVA.
10. Programs to write applets to draw the various shapes: a) Cylinder b) Cube c) Square inside a circle d) Circle inside a square e) Polygons etc.,
11. Create and manipulate labels, lists, text fields, text areas and panels.
12. Understand and handle mouse events and keyboard events.
13. Client/Server interaction with stream socket connections (Use NET packages).
14. Exception Handling for – (a) Divide by zero error (b) Null values (c) Data entry
15. Program to read the data from user and save it to two different files, display the contents and exchange the contents of those two files using IO package.
16. Develop an animation program using Multithreading viz. Bouncing Ball.
17. Program to scroll the banner using applet.
18. Design 8-digit calculator using AWT package and layout managers.
19. Implementation of Client / Server mechanism using Socket classes.
20. Design Database program for Employee details and implement INSERT, SELECT, DELETE, UPDATE queries using JDBC
21. Design concurrent server that will handle multiple clients using multithreading.

VI-Semester B. E. (Computer Science & Engineering)

Course Code: **CS607**
Title of the Course: Microprocessors and Microcontrollers

Course Scheme					Evaluation Scheme (Laboratory)		
Lecture	Tutorial	Practical	Periods/week	Credits	TW	POE	Total
--	--	01	03	02	25	25	50

List of Suggested Practical's:

1. Assembly language programme to exchange byte.

2. Assembly language programme to exchange word.

3. Assembly language programme to fnd the largest number in a given array.

4. Assembly language programme to fnd the smallest number in a given array

5. Assembly language programme to arrange the numbers in ascending order.

6. Assembly language programme to arrange the numbers in descending order.

7. Assembly language program to interface ADC and DAC with 8086

8. Exchange the content of FFh and FF00h using 8051

9. Store the higher nibble of r7 in to both nibbles of r6

10. Treat r6-r7 and r4-r5 as two 16 bit registers. Perform subtraction between them. Store the result in 20h (lower byte) and 21h (higher byte).

VI-Semester B. E. (Computer Science & Engineering)

Course Code: **CS608**
Title of the Course: Computer Graphics

Course Scheme					Evaluation Scheme (Laboratory)		
Lecture	Tutorial	Practical	Periods/week	Credits	TW	POE	Total
--	--	01	03	02	25	25	50

Practical: Students should perform 10-12 Experiments from the given list.

List of Practical's:
1. Installation of computer graphics devices and adapters.
2. Implementation of Bresenham's Algorithm – Line, Circle, Ellipse.
3. Two Dimensional transformations - Translation, Rotation, Scaling, Reflection, Shear.
4. Composite 2D Transformations
5. 2D Clipping and Windowing
6. Three dimensional transformations - Translation, Rotation, Scaling
7. Composite 3D transformations
8. Construction of simple pictures by drawing line, polylines, polygons using openGL.
9. Filling algorithms
10. Cubic Spline / Parabolic Blended curves
11. Bezier / B-Spline curves
12. File format conversion (like Bitmap, PCX)
13. Animation (Moving of object)
14. 2D Animation – To create Interactive animation using any animation software.
15. Image Editing and Manipulation - Basic Operations on image using any image editing software, Creating gif animated images, Image optimization.

VI-Semester B. E. (Computer Science & Engineering)

Course Code: **CS609**
Title of the Course: Web Technology

Course Scheme					Evaluation Scheme (Laboratory)		
Lecture	Tutorial	Practical	Periods/week	Credits	TW	POE	Total
--	--	01	03	02	25	25	50

Practical: Students should perform 10-12 Experiments from the given list.

List of Practical's:
1. Atleast six practical experiments based on above syllabus.
2. A mini project is desirable to be completed by a group of three that cover following tools.
   - XML
   - Java Server Pages
   - Servlet
   - ASP.NET
   - PHP
3. Applets, Swings.
4. I/O, AWT.
5. Database connectivity.
6. Session Management