Syllabus of BCA FIFTH Semester Course

The course will consists of Four Theory Papers of 80 marks each and Two Project Papers of 100 marks for which there will be University examinations. Other than the internal evaluation for each Theory Paper which will be of 20 marks and will be evaluated on the basis of classroom performance and internal examination.

The students will be required to answer Five Questions out of which one will be objective and compulsory, where the paper consists of more than one group the students, will be required to answer at least one question from each group.

BCA – 501: Web Site Development and Commercial Application

Introduction to Internet: Domains, Virtual Domain, IP Address, TCP/IP and its Services, WWW & Telnet, Web Server.

SGML and HTML : Introduction, Structure and HTML Page, Text Formatting, Heading and Drawing Style, Text Style, List Creation, Graphics Tag, Table, Colspan & Rowspan, Linking Documents, External and Internal Linking, Frames & Frameset, Marquee.

Cascading Style Sheet: Cascading Style Sheet Creation, Font, Color, Margin, List in CSS.

Common Gateway Interface : Introduction, CGI URL Interpreted by Web Server, CGI Program Format, PERL Baric and PERL String, Variables in PERL, Array and Index Array, Hash Array, Operators in PERL, Control Statement, Condition and Looping in PERL, Functions – String Functions, Array Functions, Math Functions, Input/output in PERL, File Handling in PERL, Directory Management, Pattern Matching Operator and Function, Subroutine Creating, Argument Passing in Subroutine, Library in PERL, Object Type Programming in PERL, PERL Package and Module.

Database Connectivity: Features, ODBC Object Method, Debugging Command & Technique in PERL.

JavaScript : Introduction to JavaScript in Web Pages, Advantages of JavaScript, Program Format, Data Types and Variables, Operators, Array Creation, Conditional and Looping Statement, Pre-Defined Functions, User Function Creation, Existing Dialog Box, Brower Object in JavaScript, Event Handling in JavaScript, Form Creation on Web Pages, Different Form Button, Built-In Objects in JavaScript.

Bibliography and References:

1. *IVan Bayross, HTML, DHTML, JavaScript, Perl CGI, BPB.*

BCA – 502: Software Engineering

Software Engineering : The Role of Software Engineering in System Design, History of Software Engineering, The Role of Software Engineer, The Software Life Cycle, The Relationship of Software Engineering to Other Areas of Computer Science, The Relationship of Software Engineering to Other Disciplines.

Software Nature and Qualities: Classification of Software Qualities, Representative Qualities, Quality Requirement in Different Application Areas, Measurement of Quality.

Software Engineering Principles : Rigor and Formality, Separation of Concerns, Modularity, Abstraction, Anticipation of Change, Generality, Incrementality, Applications of Software Engineering Principles to Compiler Construction and System Engineering.

Design and Software Architecture : The Software Design Activity and its Objectives, Modularization Techniques, Handling Anomalies, A Case Study in Design, Concurrent Software, Object-Oriented Design, Architecture and Components.

Specification : The Uses of Specifications, Specification Qualities, Classification of Specification Styles, Verification of Specifications, Operational Specifications, Descriptive Specifications, Building and Using Specifications in Practice.

Verification : Goals and Requirements of Verification, Approaches to Verification, Testing, Analysis, Symbolic Execution, Model Checking, Putting it All Together, Debugging, Verifying Other Software Properties.

The Software Production Process : What is a Software Process Model?, Why are Software Process Models Important?, The Main Activities of Software Production, An Overview of Software Process Models, Dealing with Legacy Software, Case Studies, Organizing the Process, Organizing Artifacts: Configuration Management, Software Standards.

Management of Software Engineering: Management Functions, Project Planning, Project Control, Organization, Risk Management, Capability Maturity Model.

Software Engineering Tools and Environments: Historical Evolution of Tools and Environments, Dimensions for Comparing Software Tools, Representative Tools, Tool Integration, Forces Influencing the Evolution of Tools.

Epilogue: The Future, Ethics and Social Responsibility, Software Engineering Code of Ethics.

Bibliography and References:

1. Carlo Ghezzi, Mehdi Jazayeri, Dino Mandrioli, Fundamentals of Software Engineering, PHI.

BCA – 503: .NET Programming

Introduction to Programming: Introduction, What is a Program? , Role Played by a Program to Perform a Task, what is a Programming Language? , Types of Programming Languages: High Level Language, Assembly Language, Low Level Language, High Level to Low Level Language Conversion, Using Interpreters, Using Compiler, Program Development Life Cycle, Analyzing the Problem, Developing a Solution: Coding the Solution, Testing and Debugging the Program, Object Oriented Programming (OOP), Encapsulation, Abstraction, Inheritance, Polymorphism, Event-driven Programming.

.NET Programming: What is .NET? , .NET Framework, Common Language Runtime (CLR), CLR Vs JVM, Base Class Library (BCL), Common Language specifications (CLS), Common Type System (CTS), Microsoft Intermediate language (MSIL), Metadata, Assemblies, Managed Code, Garbage Collection, Languages in .NET.

Introduction to Visual Studio 2005 : System Requirements, Installing Visual Studio 2005, Installing IIS 6.0, Installing Visual Studio 2005, Opening Visual Studio 2005, Visual Studio 2005, Integrated Development Environment, Title Bar, Menu Bar, Toolbar, Toolbox Solution, Explorer Window, Properties Window, Design Window, Code Window, Project Designer, Intelligence-Writing, Correct Code Symbolic Renaming.

Bibliography and References:

1. *Vikas Gupta, .NET Programming, Dreamtech.*

BCA – 504: ASP.NET

ASP.NET 2.0 Essentials : Introduction to ASP.NET, Versions of ASP.NET, Benefits of ASP.NET, Robust Database-driven, Functionality, Faster Web Applications, Memory Leak and Crash Protection, Easy Deployment, Multiple Development, Language Support. What's New in ASP.NET 2.0? Developer, Productivity, Administration and Management, Performance and Scalability, Introducing ASP.NET 2.0 IDE, Visual Web Developer.

Developing a Web Application: History of Web Applications, HTML, DHTML Scripting Languages, Serverside Languages, PHP, JSP, PERL. Anatomy of ASP .NET 2.0, ASP.NET 2.0, Provider Model, ASP .NET 2.0 Coding Models, Inline Code Model, The Code-Behind Model, Code Sharing, Using the App_Code Folder, Using the Bin Folder, Using the Global Assembly Cache, Compilation in ASP .NET 2.0, Managing States of an ASP .NET Application, The Application-State, The Session-State, The View-State, Using Application State, Session State, and View-state.

Standard Controls: Introducing Controls, Designer Support for Controls, Introduction to Standard Controls, Web Control Class, Label Control, Changing Properties of a Label Control, TextBox Control, Setting Properties of a TextBox Control, Button Control, Setting Properties of a Button Control, Handling Events of a Button Control, ImageButton Control, Setting Properties of a ImageButton Control, ListBox

Control, Setting Properties of a ListBox Control, RadioButton. Control, Setting Properties of a RadioButton Control, Handling Events of a RadioButton Control.

Bibliography and References:

1. Vikas Gupta, .NET Programming, Dreamtech.

BCA – 505: Projects

Two Projects based on Theory Paper BCA – 501.

BCA – 506: Projects

Two Projects based on Theory Paper BCA – 504.