Tilak Maharashtra University

Bachelor of Computer Applications

Syllabus 2018 & 2019 Batch

BCA – 540 -18 ASP.Net

Course Outline

1. Introduction to ASP.NET

The .NET Framework, The .NET programming Framework, .NET languages, The .NET class library, ASP vs. ASP.NET, About ASP.NET, Basic difference between C# and VB.NET

2. ASP.NET 2.0

Features of ASP.NET 2.0, Stages in Web Forms Processing, Introduction to Server Controls, HTML Controls, Validation Controls, User control, Data Binding Controls, Configuration, Personalization, Session State

3. Declaring Variables in ASP.NET

Data Types, Initializes, Arrays, Enumerations. Variable Operations- Advanced Math Operations, Type Conversions. Object Based Manipulation - String Object, Date Time Object, Time span object & Array Object. Conditional Structures, Loop Structures, Functions & Subroutines – Parameters, Procedure Overloading, Delegates.

4. Web Server and User

Installing IIS. IIS Manager- Creating a virtual directory, Virtual directories and Applications, Folder Settings, Adding virtual directory to your neighborhood.

5. ASP. NET Applications

ASP.NET file types, the bin directory, code-behind, The Global.asax, Understanding ASP.NET classes. ASP.NET configuration

6. Overview of ADO.NET

ADO.NET architecture, Accessing Data using data adapters and datasets, using command and data reader, binding data to data bind controls, displaying data in data grid.

Reference Books:

1) The complete Reference ASP.NET by Matthew MacDonald- Tata McGraw-Hill.
Professional ASP.NET – Wrox Publication

BCA – 541-18 Python

Course Outline

Introduction to Python

- Introduction to Python- an interpreted high level language, interactive mode and script mode. Variables, Expressions and Statements
- Variables and Types-mutable and Immutable variable and Keywords.
- Operators and Operands in Python. (Arithmetic, relational and logical Operators),
- Operator precedence, Expressions and Statements (Assignment Statement);
- Taking input (using raw_input() and input()) and displaying output – print statement
- Comments in Python

Conditional and Looping Construct

- if - else statement and nested if – else while, for, use of function in for, Nested loops
- break, continue, pass statement
- Use of compound expression in conditional constructs

Functions

- Built-In Function, invoking built in functions
- Module (Importing entire module or selected objects using from statement)
- Functions from math, random, time & date module.
- Composition
- User Define Function: Defining, invoking functions, passing parameters (default parameter values, keyword arguments)
- Scope of variables, void functions and functions returning values

Strings

- Creating, initializing and accessing the elements;
- String operators: +, *, in, not in, range, slice [n:m]
- String built in functions & methods:
- Strings constants defined in string module Regular Expression and Pattern Matching

Lists

- Concept of mutable lists, creating, initializing and accessing the elements of list
- List operations (Concatenation, Repetation, Membership, list slices), List comprehensions
- List functions & methods: len, insert, append, extend, sort, remove, reverse, pop Tuples
- Immutable concept, creating, initializing and accessing the elements in a tuple;
- Tuple functions: cmp(), len(), max(), min(), tuple() Sets

- Concept of Sets , creating, initializing and accessing the elements of
- Sets operation(Membership, union, intersection, difference, and symmetric difference Dictionaries
- Concept of key-value pair, creating, initializing and accessing the elements in a dictionary,
- Traversing, appending, updating and deleting elements
- Dictionary functions & Methods: cmp, len, clear(), get(), has_key(), items(), keys(), update(), values()

Modules

- More on Modules: Executing modules as scripts, The Module Search Path, "Compiled" Python files Standard Modules
- The dir( ) Function
- Packages Importing * From a Package, Intra-package References, Packages in Multiple Directories

File Handling

- Output Formatting
- Reading and Writing Files (text and binary mode)

Errors and Exceptions

- Syntax Errors, Exceptions, Handling Exceptions, Raising Exceptions
- User-defined Exceptions, Defining Clean-up Actions (try - finally), Predefined Clean-up Actions

Introduction to Object oriented concepts in Python

- Object Oriented concepts
- Objects, Python Scopes and Namespaces
- Classes, Class Objects, Instance Objects, Method Objects, Class and Instance Variables
- Inheritance

Database handling using Python

Reference Books

- Python Crash Course: A Hands-On, Project-Based Introduction to Programming (2nd Edition) Author: Eric Matthes
- Python Programming for Beginners: An Introduction to the Python Computer Language and Computer Programming
- Python for Beginners: The Ultimate Beginners Guide to Python Programming With Step by Step Guidance and Hands-On Examples.
- Core Python Programming Dr. R. Nageswara Rao

BCA – 542 -18 Linux

Course Outline

Unit-I

Linux Operating system history, concept and architecture, Basic features of Linux, Advantages of Linux, Basic architecture of Unix/Linux operating system, Overview of Linux kernel, Kernel space, user space. Shells in Linux, features of shells, Minimum Hardware requirement for installation of linux operating system, Installation methods.

Unit-II

Linux file system architecture, commands for files and directories:touch,cd,mkdir,rmdir,rm,pwd,more,less,head,tail,Creating and viewing files using cat and VI editor. Detail study of VIM editor. Standard input and output operators in linux.

Unit-III

Linux system administration :user administration, adding and deleting of users, File ,and directory permissions in Linux, special file and directory permissions like stiky bit,SUID and SGID,creating and managing groups, modifying group attributes, study of su command ,configuring X windows in linux,KDE and GNOME environments.

Unit-IV

Study of processes: processes and processes states, nit process,Xinetd processes, Process priority ,nice,renice commands, scheduling of tasks using crontab,ps,kill,find,sort commands ,study of rpm command. Tar command, disk related commands, disk partitioning and formatting, study of /etc/fstab.

Unit-V

Accessing file system & related devices, Basics of troubleshooting, Run levels and init ,study of /etc/inittab,Recovery of root password, shell programming-scripting basics, conditional statements.

Reference Books:

Linux: The Complete Reference, Sixth Edition - Richard Petersen

Linux in a Nutshell, 6th Edition - Ellen Siever, Stephen Figgins, Robert Love, Arnold Robbins

BCA – 543-18 Business Applications

Course Outline

1. **Sales Order Processing System**
   Sales Enquiry & preparation of Quotation
   Order acceptance
   Dispatch & Invoicing
   Sales Analysis (based on products, Customers)
   2Sales Invoice

2. **Purchase Order Processing System**
   Enquiry & receive Quotation
   Vendor selection (Vendor analysis)
   Order preparation (with delivery schedule)
   Order amendment
   Receipt of material (goods inward / GRN)
   Supplier's bill passing
   Follow up of pending purchase order

3. **Inventory Management System**
   Stock accounting & control
   (raw material, work-in-progress, finished goods)
   Stores transactions (Receipts, Issues & adjustments)
   Bin card & Stock ledger
   Lead time
   BOM processing with product configuration
   Inventory levels – EOQ – ABC analysis
   Inventory control Reports (slow moving - non moving items)

4. **Hotel Management System**
   Enquiry & Booking (Room reservation)
   Room & Services details
   Check-in, Stay & Check-out of customer
   Billing

Reference Books :

· MIS by W.S. Jawadekar
· MIS by Jerome Kanter
· MIS by Gordon B. Davis
· MIS by Laudon and Laudon
· Marketing Management by Philip Kotler
· Production and Operations Management by Mayer
· Modern Production Management by R V Badi

BCA – 546-18 UML

Course Outline

1.1. Getting started
1.2. Models
    1.2.1. Importance of modeling
    1.2.2. Principles of modeling
    1.2.3. Object-oriented modeling
1.3. Review of Object-Orientation
    1.3.1. Objects and classes
    1.3.2. Abstraction
    1.3.3. Inheritance
    1.3.4. Polymorphism
    1.3.5. Encapsulation
    1.3.6. Message passing
    1.3.7. Associations
    1.3.8. Aggregation

2. Introduction to UML
2.1. History
2.2. The components of the UML
2.3. Building blocks of the UML: Things, Relationships, Diagrams
2.4. Common mechanisms in the UML
2.5. Architecture

3. Basic structural modeling
3.1. Classes
3.2. Relationships
3.3. Class diagrams

4. Advanced structural modeling
4.1. Interfaces, Types and Roles
4.2. Packages
4.3. Instances
4.4. Object diagrams

5. Basic behavioral modeling
5.1. Interactions
5.2. Use cases and use case diagrams
5.3. Interaction diagrams
5.4. Activity diagrams

6. Advanced behavioral modeling
6.1. Events and Signals

6.2. State machines
6.3. Processes and Threads
6.4. Time and Space
6.5. Statechart diagrams

7. Architectural modeling
7.1. Components and Component diagram
7.2. Deployment diagram
7.3. Collaborations

8. New diagrams in UML 2.0

Referance Books:

- Unified Modeling Language User Guide- Grady Booch, Games Rumbaugh, Ivar Jacobson
- UML 2 for dummies – Michael Jaeasse, Chonoles, James A., Schardt
- Learning UML 2.0 – Russmiles, Kim Hamilton