Tilak Maharashtra University

Bachelor of Computer Applications

Syllabus 2018 & 2019 batch

BCA–640-18 Cloud Technology

Topic 1) Introduction to Linux Networking

Basics of linux OS, advance user management, permissions & Task Scheduling, RAID Implementation (RAID0, RAID1, RAID5, RAID6, RAID10), Logical Volume Management (LVM), software Management using rpm, yum. Linux Networking: DHCP Server (Dynamic Host Configuration Protocol), Apache Web Server, FTP Server, NFS Server, CIFS Server, DNS Server, access control lists, Using other linux distributions (ubuntu, CentOS), understanding Routers & Switches, Security Enhanced Linux, using telnet, ssh, putty, using vnc, rdp, using GIT

Topic 2) Introduction to Virtualization

What is virtualization, concepts, Implementation of Virtualization.Implementation of remote accessibility, advantages & disadvantages, limitation.Relationship between Virtualization & Cloud Computing.

Topic 3) Virtualization for Enterprise

Virtualization for Enterprise: Vmware, Xen, KVM, Hyper-V, Virtual Box.
Bare Metal Virtualization (ESXi), iscsi Intro & Setup, NAS (Network attached storage) implementation, SAN (Storage Area Network) implementation, SNAPSHOTS, VLANS

Topic 4) Cloud Computing Fundamental

Cloud Computing definition, private, public and hybrid cloud. Cloud types; IaaS, PaaS, SaaS. Benefits and challenges of cloud computing, public vs private clouds, role of virtualization in enabling the cloud; Business Agility: Benefits and challenges to Cloud architecture. Application availability, performance, security and disaster recovery; next generation Cloud Applications.

Topic 5) Cloud Applications& Services

Technologies and the processes required when deploying web services; Deploying a web service from inside and outside a cloud architecture, advantages and disadvantages.
Cloud Services: Reliability, availability and security of services deployed from the cloud. Performance and scalability of services, tools and technologies used to manage cloud services deployment; Cloud Economics: Cloud Computing infrastructures available for implementing cloud based services.

Topic 6) Selecting Cloud Platform

Economics of choosing a Cloud platform for an organization, based on application requirements, economic constraints and business needs (e.g Amazon, Microsoft and Google)

Topic 7) Best Practice Cloud IT Model

Analysis of Case Studies when deciding to adopt cloud computing architecture. How to decide if the cloud is right for your requirements. Cloud based service, applications and development platform deployment so as to improve the total cost of ownership (TCO).

Reference Books:

1. Distributed and Cloud Computing, 1st edition, Morgan Kaufmann, 2011.
2. GautamShroff, Enterprise Cloud Computing Technology Architecture Applications [ISBN: 978-0521137355]
3. Toby Velte, Anthony Velte, Robert Elsenpeter, Cloud Computing, A Practical Approach [ISBN: 0071626948]

Dimitris N. Chorafas, Cloud Computing Strategies [ISBN: 1439834539]

BCA–641-18 Advanced Java

1. **Swing**:
   MVC Architecture, Advantages pf swing over AWT, JApplet, JFrame, JPanel etc

2. **Collection Framework**
   Collection Interfaces:- Set, List, Map. Collection Classes:- ArrayList, LinkList, HashSet etc. Legacy Classes & Interfaces:- Enumeration, Iterator, Vector, Stack, Dictionary, Hash table, Properties

3. **Socket Programming**
   Networking eg:- Socket, Client/Server, Reserve Sockets, Proxy Servers, Internet Addressing. TCP/IP Client /Server Sockets. URL , Client/Server Programming. Datagrams.
4. **Java Beans using BDK and JBuilder**
   Introduction, Advantages of Java Beans, Bean Life Cycle, Properties of Beans, BDK, Bean Event Model.

5. **Java Database Connectivity:**
   JDBC introduction, JDBC Vs ODBC, JDBC Architecture,
   Types of JDBC Drivers, JDBC Interfaces eg: Connection, Statement, Prepared Statement, CollableStatement, DatabaseMetaData, ResultSet, ResultSetMetaData.
   JDBC Classes eg:- DriverManager, Executing SQL Query, Transactions eg:- Commit, Rollback, SetAutoCommit(), Batch Updates.

6. **Remote Method Invocation**
   Distributed Object Systems eg: Remote Procedure Call, Java Remote Invocation.
   RMI Architecture, RMI Services – Naming/Registry Services, Object activation, Distributed garbage Collector.

7. **Java Servlet Programming**
   Introduction of Servlet, Implementation, GenericServlet Class, SingleThreadModel Interface, Http Request/Response, HttpServlet Class, Servlet Configuration, Servlet Life Cycle, Session Tracking:- Hidden Fields, Cookies, URL rewriting, Session object, Request Dispatcher Interface, sendRedirect., Servlet Chaining.

Reference Books:

Java Servlet Programming- O'Reilly
JDBC 4.2, Servlet 3.1, and JSP 2.3 Includes JSF 2.2 and Design Patterns, Black Book, 2ed
Core and Advanced Java, Black Book, Recommended by CDAC, Revised and Upgraded - Dreamtech Press

BCA–642-18 Android

Topic 1) HTML5& CSS

HTML5

- Introduction
- Features
- Elements & attributes in HTML5 ,<canvas>, <video>, <audio>.
- Introduction to Scalable Vector Graphics (SVG),Geolocation
- Form input types
- HTML5 web storage
- Introduction of HTML5 Web worker.

CSS:

- Introduction to Style Sheet
- Types of style Sheets: Inline, External, Embedded CSS, Text formatting properties, CSS Border, margin properties, Positioning.
- Use of classes in CSS, color properties, use of &

Topic 2) Introduction to Android

- Introduction to Android: A little Background about mobile technologies, Android - An Open Platform for Mobile development
- Android SDK Features
- Android versions and features.

Topic 3) Tools for Development

- Installing Android
- First Android application
- Running on Emulator
- Android development Tools, Android Studio, IDEs and Tools

Topic 4) Android Architecture and OOPS

- Building Blocks of Android
- Java Classes and Objects, Class Methods and Instances, Inheritance and Polymorphism in Java, Interface and Abstract class.

Topic 5) Android UI

- Fundamental Android UI Design, Introducing Views, In Creating new Views
- Introducing Layouts, Using resources, Complex UI components, Building UI for performance, Using themes, Debugging Android Code.

Topic 6) Activity, Intent & Fragment

- Introduction to Activity
- Lifecycle of Activity
- Introduction to Intent
- Types of Intent : Implicit and Explicit
- Introduction to Fragment
- Lifecycle of Fragment

Topic 7) Database and Content Providers

- Introducing Android Databases
- Introducing SQLite on Android
- SQLiteOpenHelper and creating a database, Opening and closing a database, Working with cursors Inserts, updates, and deletes,
- Creating new content Provider, Using Content providers, Native Android Content provider.

Reference Books:

- Android Application Development All-In-One for Dummies – By Barry Burd
- Android Programming for Beginners – John Horton

BCA - 643-18-Organizational Behavior

1. **Organization & Organizational Behavior**

Introduction
Organization
Organizational Behaviour
Intuition & Systematic Study
Organization & Organizational Behavior
Historical Evolution of Organizational Behavior
Discipline Organizational Behavior
Organizational Behavior to –Day
Models for organizational Behaviour

2. **Perception & Individual Decision Making**

Introduction
Factors Influencing Perception
Attribution Theory
Frequently used Shortcuts in Judging others
Specific Application in Organizations
The Link between Perception & Individual Decision Making
Improving Creativity in Decision Making
How are Decisions actually made in Organizations?
Individual Differences: Decision Making Styles
Organizational Constraints
Ethics in Decision Making

3. **Personality & Attitude**

Introduction
Definition
Theories on Personality
The shaping of Personality
Assessment of Freud's Stages
Immaturity to Maturity
Determinants of Personality
Personality Traits
The Myers – Briggs Framework
Major Traits Influencing Organizational Behavior
Personality & Organizational Behavior
Attitudes
Formation of Attitudes
Types of Attitudes
Functions of Attitudes
Changing Attitudes
Ways of Changing
Types of Change
Attitudes & OB
Job Satisfaction
Job Involvement
Organizational Commitment

Values
Job satisfaction

4. **Learning**

Nature of Learning
Process of Learning
Cognitive Theory of Learning
Social Learning Theory
Principles of Learning
Schedules of Learning
Learning Curves
Learning & Organizational Behavior

5. **Motivation**

Introduction
Intrinsic and extrinsic motivation
Some theories on motivation
Motivation and Performance
Motivation strategies
Importance of motivation
Motivational drives

6. **Stress**

Introduction
Model of stress
Stress manifestation
Coping strategies
Coping and personality
Sources of stress
Stress management
Organization approaches to stress management

Reference Books:

Organizational Behaviour – Stephen Robbins