

Bachelor Of Computer Applications Programme Curriculum

Semester 1

English I

1. Extensive Reading
2. Tracing The Texture Of Texts
3. Anaphoric And Cataphoric References
4. Intensive Reading
5. Matching Discourse Functions with Corresponding Linguistic Structures
6. Coherence And Grammatical Linkers
7. Critical Thinking
8. Components Of An Argument
9. Oral Communication Skills
10. Functional Grammar
11. Parts Of Speech

Applied Mathematics

1. Theory of equations
2. irrational roots and imaginary roots
3. Binomial, Exponential and logarithmic series
4. Arithmetic Progression
5. Geometric progression
6. Linear Algebra
7. Matrix operations
8. Geometric properties of plane
9. linear transformation
10. Linear systems and matrices
11. Trigonometry
12. Probability
13. Baye's theorem
14. Binomial and Normal distributions

Computer Concepts & Problem Solving

1. Evolution of Computers
2. Organization of Modern Digital Computers
3. Operating System
4. Graphical User Interface
5. Word Processing
6. Macros
7. Converting doc into www Pages
8. Spreadsheet Programs
9. Managing workbooks
10. Problem Solving aspects
11. Implementation of Algorithms
12. Efficiency of Algorithms
13. Analysis of Algorithm
14. Factoring Methods

Introduction To Digital Logic Fundamentals

1. Binary Systems
2. Digital Systems,
3. Number Base Conversions
4. Complements
5. Boolean Algebra and Logic Gates
6. Minimization: K-Map Method
7. Combinational Circuits
8. Binary Adder, Subtractor
9. Decoders
10. Encoders
11. Multiplexers.
12. Latches
13. Flip-Flop
14. Registers
15. Counters
16. Asynchronous Sequential Circuit

Programming In C

1. C fundamentals
2. Library functions
3. Data input output functions
4. Flow of control
5. Passing arguments
6. Recursions
7. Storage Classes
8. Passing arrays to functions
9. Multi-dimension arrays
10. Pointers
11. Passing pointers to Functions
12. Files Processing

Semester 2

ENGLISH II

1. Formal letters of invitation
2. Making posters
3. Enriching word power
4. Intensive reading
5. E mail writing
6. Expanding quotes
7. Writing project proposals
8. writing project proceedings
9. writing project evaluation
10. news reporting
11. Basics of editing
12. Advertisements
13. grammar tests

BUSINESS STATISTICS

1. Time Series
2. Method of Least Square
3. Index Numbers
4. Probability
5. Addition and Multiplication Theorem –Baye's Theorem
6. Sampling Techniques
7. Tests of Significance
8. Correlation
9. Regression

DATA STRUCTURES

1. Problem solving
2. Efficiency–Analysis
3. Abstract Data Type (ADT)
4. List ADT
5. Stack ADT
6. Queue ADT
7. Binary Trees
8. Binary Search Trees
9. AVL Trees
10. Hashing
11. Sorting methods
12. Graph basics
13. Shortest-Path Algorithms
14. Un weighted Shortest Paths
15. Minimum Spanning Tree
16. Depth First Search, Breadth First Search

MICROPROCESSORS

1. Microprocessors
2. Assembly Languages
3. 8085 MPU
4. 8085 Interrupts
5. maskable interrupts
6. data transfer instructions
7. stack instructions
8. Addressing modes
9. Assembly programming
10. arithmetic operations
11. logical operations
12. 8085 applications
13. 8086 microprocessor
14. 8051 microcontrollers

INTRODUCTION TO ACCOUNTING

1. Commerce definition
2. Sole Proprietor
3. Partnership
4. Public sector: Features and merits
5. Marketing Definition
6. function of marketing
7. Fundamentals of Bookkeeping Journal – Ledger
Trail balance
8. Final Accounts
9. Trading and Profit and Loss Accounts
10. Balance Sheet
11. Accounts of non-profit organizations

Semester III

WEB DESIGNING

1. Introduction To HTML
2. Graphics To HTML Documents
3. Style Sheets
4. Creating Style Sheet Tools
5. Javascript
6. Document Object Model
7. Objects In HTML
8. Event Handling
9. Built-In Objects
10. User Defined Objects
11. Cookies.
12. DHTML
13. Cascading Style Sheets
14. External Style Sheets
15. Javascript Style Sheet.

PC HARDWARE & NETWORKING

1. Organization of computer
2. Software and hardware
3. Input/output devices
4. Assembling and disassembling
5. Network Topologies
6. The OSI model
7. TCP/ IP Model
8. Network adapters
9. Cabling and troubleshooting.
10. Routers
11. Switches
12. Sharing files and folders
13. Network troubleshooting
14. Types of Internet Connections

SOFTWARE ENGINEERING

1. Definition of software engineering
2. Software Engineering paradigms
3. Software Project Planning
4. Software Requirement Analysis
5. Software Risks
6. Software Configuration
7. Management System Analysis
8. Modelling the System Architecture
9. The elements of the analysis model
10. Cardinality and Modality
11. Classical Analysis Methods
12. Software Design Principles
13. Cohesion
14. Coupling
15. Software Testing Methods

OBJECT ORIENTED PROGRAMMING

1. Object-Oriented Paradigm
2. Elements Of OOP
3. C++ Fundamentals
4. Classes And Objects
5. Constructors And Destructors
6. Operator Overloading
7. Inheritance
8. Virtual Functions
9. Polymorphism
10. Friend Operator Function
11. C++ Streams
12. Console Streams
13. File Streams
14. Exception Handling

COMPUTER ORGANIZATION

1. Basic Building Blocks I/O
2. ALU And Its Components
3. Control Unit And Its Functions
4. Addressing Techniques
5. Registers
6. Main Memory
7. Cache
8. Virtual Memory
9. Buses
10. storage devices and printers
11. 8085 microprocessors

PERSONALITY DEVELOPMENT

1. Personality: Definition
2. Biological Measures – Behavioral Assessment
3. Self-Other accuracy in predicting behaviour-
Self-Presentation tactics
4. the measurement of self-esteem
5. Perceiving the social world
6. Cognitive social psychology
7. Impression Management
8. Cognitive Dissonance
9. Time Management
10. Psychometrics
11. Body Language
12. Peer Pressure and Bullying

Semester IV

WEB PROGRAMMING USING PHP

1. PHP with web server
2. Flow Control – Arrays
3. Web Protocols - HTML scripts and Form
4. Embedding PHP code into HTML
5. Adding dynamic content
6. file handling
7. Functions
8. Call by value and call by reference
9. Session
10. Object Oriented Programming in PHP
11. Abstract class – Inheritance - Using Final keyword - Exception Handling
12. MySQL Architecture

COMPUTER NETWORKS

1. Direction of Data flow
2. types of Connections
3. Topologies
4. Protocols and Standards
5. ISO / OSI model
6. Transmission Media
7. Hamming code
8. Packet Switching and Datagram approach
9. IP addressing methods
10. Routers
11. Multiplexing – Demultiplexing
12. Congestion Control
13. Domain Name Space
14. Security
15. Cryptography

ENTERPRISE RESOURCE PLANNING

1. Integrated Management Information
2. Supply Chain Management
3. Integrated Data Model
4. Benefits of ERP
5. Building the Business Model
6. ERP Implementation
7. ERP domain MPGPRO
8. Market Dynamics
9. Dynamic Strategy
10. Multi-Client Server Solution
11. Open Technology
12. User Interface
13. Application Integration
14. Basic Architectural Concepts
15. System Control Interfaces

OPERATING SYSTEMS

1. Computer System Organization
2. Computer System Architecture
3. Computer System Structure
4. Operating System Operations
5. Multithreading Models
6. CPU Scheduling
7. Semaphores
8. Methods for handling Deadlocks
9. Contiguous Memory allocation
10. Paging
11. Thrashing
12. Virtual Memory
13. Directory and Disk Structure
14. File System Implementation
15. Directory Implementation

DATABASE MANAGEMENT SYSTEMS

1. Database Systems
2. Characteristics of DBMS
3. Architecture of DBMS
4. Database Models
5. ER Model
6. Relational Database Model
7. Relational Algebra
8. Functional dependencies
9. Normalization
10. Data Retrieval
11. SQL Plus
12. Transaction Control
13. Language Query Processing
14. Distributed Architecture
15. Concurrency Control
16. Backup & Recovery Techniques

Semester V

Specialisation in Multimedia and Animation

MULTIMEDIA SYSTEMS

1. Using text in Multimedia
2. Font Editing and Design Tools
3. Hypermedia and Hypertext
4. Sound
5. Images
6. Animation
7. Video
8. Evaluating a compression system
9. Video compression techniques
10. JPEG image compression standard
11. MPEG motion video compression standard
12. DVI Technology
13. Multimedia Hardware
14. Internetworking
15. Tools for WWW
16. Designing WWW.

INTRODUCTION TO JAVA PROGRAMMING

1. Features of java
2. JDK Environment & tools
3. OOPs Concepts
4. Structure of java program
5. Decision Making
6. One Dimensional arrays
7. Two Dimensional array
8. Creating Classes and objects
9. Inheritance
10. Interfaces
11. Abstract classes and methods
12. Implementation of Polymorphism
13. Method Overloading
14. Method Overriding
15. Nested and Inner classes
16. Packages
17. Wrapper classes

INTRODUCTION TO PYTHON PROGRAMMING

1. History of Python
2. Python features
3. Standard data types
4. Type Conversion,
5. String manipulations
6. Lists
7. matrices
8. Built –in Functions and methods
9. Tuples
10. Dictionary
11. I/O function
12. File and Directory related methods.

SKETCHING & DRAWING

1. Indoor & Outdoor Sketching & Drawing
2. Basics Of Sketching & Drawing
3. Shading In Different Angles Of Pencil Strokes
4. Paper Division & Forming
5. Human Anatomy
6. Geometrical Drawing
7. Perspective Drawing
8. Still Life- Compositions
9. Mediums And Techniques Of Paintings
10. Clay Modelling

GRAPHIC DESIGN & VISUAL ARTS

1. Principles Of Compositional Design
2. Directional Movement
3. Windows Paint
4. Color Knowledge
5. Knowledge About Pixels
6. Vector Graphics
7. Transforming & Shaping
8. Weld & Intersection Of Objects
9. Color & Fills
10. Special Effects
11. Raster Graphics
12. Adobe Photoshop
13. Straightening And Cropping An Image
14. Adjusting Lightness With The Dodge Tool

Semester V

Specialisation in Data Analytics

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1. Types of machine learning
2. Supervised learning
3. Linear Regression
4. Multilayer perceptron
5. Decision trees
6. Classification of regression trees
7. Probability and Learning
8. Nearest Neighbor methods.
9. Linear Discriminant Analysis
10. Principal component analysis
11. The Genetic algorithm
12. Markov Chain Monte Carlo methods
13. Baysean Networks
14. Hidden Markov Models

R Programming

1. Evolution of R
2. R – Data Types , **R**-Operators
3. R – Decision Making
4. R – Loop-R
5. R – Function
6. Lists
7. Vector
8. R – Matrices
9. R – Factors
10. R – Data
11. Working with Tables
12. Control Statements

Semester V

Specialisation in Database Systems

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11. I/O function
12. File and Directory related methods.

MOBILE APPLICATION DEVELOPMENT

1. The Ingredients of an Android Application
2. Eclipse for Android Software Development
Building a User Interface
3. PhoneGap
4. PhoneGap API
5. Apache Cordova
6. jQuery Core
7. DOM Element Selection And Manipulation

MACHINE LEARNING-R PROGRAMMING

1. Types of learning
2. Supervised learning
3. Logistic regression.
4. Classification techniques
5. Naive Bayes
6. Support vector machines
7. Model selection and feature selection
8. Knime tool
9. Weka Tool .
10. K means algorithm
11. R for Un Supervised learning
12. R Flow control
13. Viewing Named Objects
14. Matrix , Data Frame , List
15. ggplot - High-level plots

Semester VI

Specialisation in Multimedia and Animation

COMPUTER GRAPHICS

1. Video display devices
2. Drawing line, circle and ellipse generating algorithms
3. Two-dimensional Geometric Transformations
4. Windowing and Clipping
5. Three-dimensional concepts
6. Object representations
7. Bezier curves and surfaces
8. Geometric and Modelling transformations
9. Visible Surface Detection Methods
10. Classification
11. hidden surface removal
12. Computer Animation
13. Creating interactive multimedia
14. Multimedia Authoring Systems

DATA WAREHOUSING AND DATA MINING

1. Data Warehouse
2. Multidimensional Data Model
3. Data Warehouse Architecture
4. Preprocessing
5. Data Mining Primitives
6. Association Rule Mining
7. Classification and Prediction
8. Decision Tree Induction
9. Bayesian Classification
10. Cluster Analysis
11. Partitioning methods
12. Outlier Analysis
13. Web Mining
14. Text Mining
15. Spatial Mining

ONLINE ADS DESIGNS AND MANAGEMENT

1. Photoshop
2. GIMP
3. Wire Framing
4. HTML 5
5. Google Studio For Labs
6. Fundamentals of Advertising
7. Critical Thinking
8. Digital Layout
9. Dynamics of Mass Communication
10. Advertising Copywriting
11. Presentation of Concept
12. Modern Graphic Design
13. Design Building Blocks Essentials
14. Photography and Visual Identity
15. Layout Design
16. Preparing your Portfolio
17. Google Search Ads
18. Create Logo

2-D ANIMATION

1. Basic factors affecting the illusion of motion
2. Video animation
3. Prevailing file format standards
4. Application in the visual arts
5. Import and export formats
6. Tools and commands palettes
7. Raster painting
8. Vector shapes
9. Basic geometric transformation
10. Boolean operations on shapes
11. Shading techniques
12. Straight-ahead animation
13. Motion paths
14. Applying geometric transformations
15. Intertwining options
16. Looping and palindrome motion

3D ANIMATION

1. Overview of World Cinema & Animation
2. 3D Production Pipeline
3. Nurbs Curves
4. Modifying and deforming geometry
5. Basic Character design
6. 3D Modeling
7. Creating Texture Maps
8. Lighting Fundamentals
9. Tools to create animatio
10. Key frame animation
11. Graph editor
12. Basic of Dynamics
13. Type of rendering

Semester VI

Specialisation in Data Analytics

COMPUTER GRAPHICS

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DATA WAREHOUSING AND DATA MINING

16. Data Warehouse
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18. Data Warehouse Architecture
19. Preprocessing
20. Data Mining Primitives
21. Association Rule Mining
22. Classification and Prediction
23. Decision Tree Induction
24. Bayesian Classification
25. Cluster Analysis
26. Partitioning methods
27. Outlier Analysis
28. Web Mining
29. Text Mining
30. Spatial Mining

DATA VISUALIZATION & VISUALISATION FRAMEWORKS

1. Classifications of Visualizations
2. Infographics vs Data Visualization
3. Graph Visualizations
4. Geo mapping
5. CMYK
6. Color profiles
7. Device profiles
8. Basic and Interactive Plots
9. D3 – dealing with data
10. Interaction and Transitions Layout
11. Three-Dimensional Tools Built with D3
12. Preparing Working Environment
13. data Plots

HADOOP ADMINISTRATION

1. Data Storage and Analysis
2. Hadoop versions
3. Environment Variables and Shell Scripts
4. The Hadoop Distributed File system
5. HDFS commands
6. Formatting the Namenode
7. Creating a /tmp Directory
8. Yarn architecture
9. The FIFO Scheduler
10. Yarn Frameworks
11. Setting Up a Hadoop Cluster
12. Balancing HDFS Block Data
13. Dealing with a Failed Disk.
14. Hive
15. HBase

BIG DATA ANALYTICS

1. Types Of Digital Data
2. Cloud And Big Data
3. Mobile Business Intelligence
4. Crowd Sourcing Analytics
5. Graph Databases
6. Sharding And Replication
7. Analyzing Data With Hadoop
8. Hadoop Pipes
9. Hadoop Distributed File System
10. Anatomy Of A Map Reduce
11. YARN
12. Hbase
13. Cassandra, Hive

Semester VI

Specialisation in Database Systems

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15. HBase

BUSINESS INTELLIGENCE

1. Data warehousing 1.0 , Data warehouse 2.0
2. Enterprise data warehouse platform
3. Building a Data warehouse
4. Dimensional Analysis
5. Data Modelling
6. Data layer Algorithms
7. Layer Integration strategies
8. Semantic framework Lexical processing
9. Data Loading - Storage, and File Formats
10. Regular expressions
11. Installing QlikView
12. Rank analysis
13. Data visualization for Data marts
14. Trend analysis

