

Vinoba Bhave University, Hazaribag

UNIVERSITY DEPARTMENT OF COMPUTER APPLICATIONS VINOBA BHAVE UNIVERSITY, HAZARIBAG

COURSE STRUCTURE CHOICE BASED CREDIT SYSTEM

The proposed CBCS system has the potential of providing a choice of a wide spectrum of subjects/branches of subjects to students in pursuit of achieving their cherished goals. This system has been globally accepted and now has become the need of the day. The UGC also has provided guidelines to the Universities for consideration and implementation of CBCS.

The University Department of Computer Applications proposes the following courses and credits to be initiated at BCA w.e.f. the session 2018 – 21. The proposed system may be modified/improved in future according to the requirements.

CORE Papers for BCA

Semester – I

Paper Code	Title	Credit	Marks
BCA F1001	Business Communications	4	100
BCA F1002	Basic Mathematics-I	5	100
BCA F1003	Business Practices And Management	4	100
BCA C1004	Introduction to Computer Science	4	100
BCA C1005	Problem Solving and Programming in C	5	100
Sessional			
BCA P1006	Computer Basics and PC Software Lab	1	50
BCA P1007	C Programming Lab	1	50
BCA P1008	Communication Skill Lab	1	50

Semester – II

Paper Code	Title	Credit	Marks
BCA F2001	Basic Mathematics II	4	100
BCA F2002	Environmental Science	4	100
BCA C2003	Database Management System	5	100
BCA C2004	Object Oriented Programming using C++	5	100
BCA C2005	Logic Design	4	100
Sessional			
BCA P2006	C ++ Programming Lab	1	50
BCA P2007	Database Management System Lab	1	50
BCA P2008	Circuit Design Lab	1	50

Semester – III

Paper Code	Title	Credit	Marks
BCA C3001	Data Structure using C	5	100
BCA C3002	Java Programming	4	100
BCA C3003	Computer Architecture	5	100
BCA C3004	System Analysis and Design	4	100
BCA C3005	Probability and Statistics	4	100
Sessional			
BCA P3006	Data Structure Lab	1	50
BCA P3007	Java Programming Lab	1	50
BCA P3008	Statistical Lab	1	50

Semester – IV

Paper Code	Title	Credit	Marks
BCA C4001	Multimedia	4	100
BCA C4002	Operating System	5	100
BCA C4003	HTML	4	100
BCA C4004	Visual Programming	4	100
BCA C4005	Computer Networks	5	100
Sessional			
BCA P4006	Multimedia Lab	1	50
BCA P4007	Visual Programming Lab	1	50
BCA P4008	HTML Lab	1	50

Semester – V

Paper Code	Title	Credit	Marks
BCA C5001	Internet Concept and Web Design	4	100
BCA C5002	Design and Analysis of Algorithms	5	100
BCA C5003	Linux Programming	5	100
BCA C5004	Computer Oriented Numerical Methods	4	100
	Elective – I	4	100
Sessional			
BCA P5005	Internet Concept and Web Design Lab	1	50
BCA P5006	Numerical Method Lab	1	50
BCA P5007	Linux Programming Lab	1	50

Semester – VI

Paper Code	Title	Credit	Marks
BCA C6001	Optimization Techniques	4	100
BCA C6002	Principle of Management	4	100
BCA C6003	Accounting and Financial Management	5	100
BCA C6004	Network Security	5	100
	Elective – II	4	100
Sessional			
BCA C6005	Project	2	100
BCA C6006	TALLY Lab	1	50

MULTIMEDIA (BCA C4001)

TIME-3 hr

FULL MARKS-70

CREDIT-4

The question paper shall consists of two sections: A and B. **Section A** will have eight (08) questions, out of which four (04) questions will be answered and will carry 10 marks each. **Section B** will consists of 10 short answer type questions which will cover the entire syllabus and will carry 30 marks in all., each short-answer type questions carrying 3 marks.

UNIT -1: AN OVERVIEW OF MULTIMEDIA

The Concept. Hardware for Multimedia Computer. Software for Multimedia. Components of Multimedia. Multimedia-Design, Production and Distribution. [Q-2]

UNIT -2: APPLICATIONS OF MULTIMEDIA:

Application Areas for Multimedia. Publishing Industry and Multimedia. Communication Technology and Multimedia Services. Multimedia in Business. [Q-1]

UNIT-3: MULTIMEDIA PEDAGOGUES:

Interactive Systems for Teaching and Learning. Concepts for Distributed Learning Environment. A Medical Application: Med net - A Medical Collaboration and Consultation System. [Q-2]

UNIT -4: MULTIMEDIA AUTHORIZING TOOLS:

Multimedia Development Tools. Features of Authoring Software. Authoring Tools. Quick Time. Hypertext. Applications of Hypertext. Elements of Hypertext. [Q-2]

UNIT -5: MULTIMEDIA DEVELOPMENT:

Learning Interface Design. Planning the Multimedia Programme/Application. Development TIPS of Multimedia Building Blocks. Multimedia Authoring. [Q-1]

TEXT BOOK:

1. Tay Vaughan - 1999– Multimedia : Making it work – Fourth Edition – Tata McGraw – Hill Edition.

REFERENCE BOOKS:

1. Walterworth john A– 1991- Multimedia Technologies and Application - Ellis Horwood Ltd. – London.
2. John F koegel Buford – Multimedia Systems – Addison Wesley – First Indian Reprint.

OPERATING SYSTEM (BCA C4002)

TIME-3 hr

FULL MARKS-70

CREDIT-5

The question paper shall consists of two sections: A and B. **Section A** will have eight (08) questions, out of which four (04) questions will be answered and will carry 10 marks each. **Section B** will consists of 10 short answer type questions which will cover the entire syllabus and will carry 30 marks in all., each short-answer type questions carrying 3 marks.

UNIT 1: INTRODUCTION & COMPUTER-SYSTEM STRUCTURES

What is an Operating System? Function O.S., O.S structure, Types of O.S, I/O Structure, Storage Structure, Storage Hierarchy, System call. [Q-2]

UNIT 2: PROCESSES & CPU SCHEDULING:

Process Concept; Process Scheduling, Operations On Processes. Basic Concepts; Scheduling Criteria; Scheduling Algorithms. [Q-2]

UNIT 3: STORAGE MANAGEMENT

Memory Management-, Contiguous Memory Allocation, Paging, Demand Paging, Segmentation, Access Methods; Directory Structure; Protection. [Q-2]

UNIT 4: DISK MANAGEMENT:

Disk Structure; Disk Scheduling; Disk Management; Swap-Space Management. [Q-1]

UNIT 5: FILE MANAGEMENT:

File-System Structure; File-System Implementation; Directory Implementation; Allocation Methods, Free-Space Management. [Q-1]

TEXT BOOK:

1. A. Silberschatz et.al.-Operating System Concepts , 6th Edition, John Wiley Inc., 2003

REFERENCE BOOKS:

1. H.M. Deitel -Operating Systems , 6th Edition, Pearson Education, 2006
2. D.M. Dhandhare - Operating Systems, 2nd Edition, Tata McGraw Hill, New Delhi, 2006

HTML (BCA C4003)

TIME-3 hr

FULL MARKS-70

CREDIT-4

The question paper shall consists of two sections: A and B. **Section A** will have eight (08) questions, out of which four (04) questions will be answered and will carry 10 marks each. **Section B** will consists of 10 short answer type questions which will cover the entire syllabus and will carry 30 marks in all., each short-answer type questions carrying 3 marks.

UNIT 1: Introduction to HTML & Tags

Introduction to HTML, HTML documents structure tags, HTML text formatting tags, Inserting Special characters, Anchor tag, List tag, Adding images and sound. [Q-2]

UNIT 2: Advanced HTML

Tables, Frames and floating, developing forms. [Q-1]

UNIT 3: CSS (Cascading Style Sheet)

Introduction to CSS, Need of design in HTML pages, Tag structure, various selectors (ID, class), various properties of font and div tag. [Q-1]

UNIT 4: Data Access & Error Handling

Web Techniques, HTTP Basics, Server Information, Processing Forms, Setting Response Headers, Maintaining State, Databases, Using PHP to Access a Database, Security, Session Fixation, File Uploads, File Access, PHP Code, Handling Output, Error Handling. [Q-2]

UNIT 5: HTML Graphics and HTML Media

HTML Forms, HTML Form Elements, HTML Input Types, HTML Input Attributes, HTML Support, HTML New Elements, HTML Semantics, HTML Migration, HTML Style Guide . [Q-2]

TEXT BOOK:

1. Jackson, Web Technologies: A Computer Science Perspective, Pearson Education, 2007.

REFERENCE BOOK:

1. Kriss Jamsa, Konrad King, HTML & Web Design, TMH Publications, 2002.
2. Jason Hunter, William Crawford, Servlet Programming, O'REILY, 2010.

VISUAL PROGRAMMING (BCA C4004)

TIME-3 hr

FULL MARKS-70

CREDIT-4

The question paper shall consists of two sections: A and B. **Section A** will have eight (08) questions, out of which four (04) questions will be answered and will carry 10 marks each. **Section B** will consists of 10 short answer type questions which will cover the entire syllabus and will carry 30 marks in all., each short-answer type questions carrying 3 marks.

Unit 1: Introduction to NET:

The .NET Framework and the Common Language Runtime, Integrated Development Environment. [Q-2]

Unit 2: Programming in C#:

Data types in C#, Keywords, Operators, Conditionals and Loops. [Q-1]

Unit 3:.NET Assemblies. :

.NET Assemblies, Shared Assemblies, Side-By-Side execution of two versions of SharedObject, Benefits of Assemblies over Predecessors. [Q-2]

Unit 4: Windows Forms:

Working with Windows Forms, Working with Windows Form Controls, Buttons, Text Boxes, Labels, Checkboxes, Radio Buttons, Listbox, Combobox, Datetime Picker, Panels, Imagebox , Progressbar, Open File Dialog, Save File Dialog, Timer. [Q-2]

Unit 5: ADO.Net:

Introduction to ADO.Net, ADO.Net Data Providers, Working with Connection, Command, DataAdapter, Dataset & Datatable. Connecting a database with Windows Application using DataGridView control. [Q-1]

Text Book: 1. Steven Holzner, Visual Basic.NET Programming Black Book, 5TH Ed. (2007), Dreamtech Publication.

Reference Books:

1. Dinesh Maidasani, VB.net, Firewall Media Publication, 2007.

COMPUTER NETWORKS (BCA C4005)

TIME-3 hr

FULL MARKS-70

CREDIT-5

The question paper shall consists of two sections: A and B. **Section A** will have eight (08) questions, out of which four (04) questions will be answered and will carry 10 marks each. **Section B** will consists of 10 short answer type questions which will cover the entire syllabus and will carry 30 marks in all., each short-answer type questions carrying 3 marks.

UNIT 1: BASIC CONCEPTS AND TERMINOLOGY:

Introduction, OSI Model, Tcp/IP Model, Services and Standards. [Q-2]

UNIT 2: COMPUTER NETWORK:

Network Topology, Performance of Network, Network Classification, Advantages & Disadvantages of Network, Transmission Media (guided and unguided), Network Architecture. [Q-2]

UNIT 3: DATA LINK LAYER:

Need for Data Link Control, Flow Control & Error Control: Flow control mechanism, Error Detection and Correction techniques. [Q-1]

UNIT 4: NETWORK LAYER: Routing, Congestion control, Internetworking principles, Internet Protocols:IPv4 packet format, Hierarchal addressing sub netting. [Q-1]

UNIT 5: TRANSPORT LAYER: Process to Process Delivery, TCP, UDP, TCP connection. [Q-1]

UNIT 6: APPLICATION Layer:

Telnet, FTP, NFS, SMTP, SNMP and HTTP. [Q-1]

TEXT BOOK:

1. Prakash C. Gupta -Data Communications & Computer Networks, PHI, New Delhi.

REFERENCE BOOKS:

1. William Stallings- Data & Communications, 6th Edition, Pearson Education.
2. Tanenbaum- Computer Networks, 3rd Edition, PHI, New Delhi.

MULTIMEDIA LAB (BCA P4006)

TIME-3 hr

FULL MARKS-50

CREDIT-1

Experiment problems of Multimedia Lab will be from the theory classes of BCA C4001

VISUAL PROGRAMMING LAB (BCA P4007)

TIME-3 hr

FULL MARKS-50

CREDIT-1

Experiment problems of Visual Programming Lab will be from the theory classes of BCA C4004

HTML LAB (BCA P4008)

TIME-3 hr

FULL MARKS-50

CREDIT-1

Experiment problems of HTML will be from the theory classes of BCA C4004