



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore

Shri Vaishnav Institute of Computer Applications

Name of Program: BCA + MCA/ BCA + MCA (Banking Technology)/ BCA (BDA)

COURSE CODE	CATEGORY	COURSE NAME	L	T	P	CREDITS	TEACHING & EVALUATION SCHEME				
							THEORY			PRACTICAL	
							END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*
BCCA401	DCC	Computer Networks	4	0	0	4	60	20	20	0	0

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;

Q/A – Quiz/Assignment/Attendance, MST - Mid Sem Test.

***Teacher Assessment** shall be based on following components: Quiz/Assignment/Project/Participation in class (Given that no component shall be exceed 10 Marks)

Course Educational Objectives (CEOs):

- To provide an introduction to the fundamental concepts on data communication and the design of computer networks.
- To get familiarized with the basic protocols of computer networks.

Course Outcomes (COs): After the successful completion of this course students will be able to

- Identify the different components in a Communication System and their respective roles.
- Describe the technical issues related to the local Area Networks
- Identify the common technologies available in establishing LAN infrastructure.

UNIT-I

Introduction: Computer Network, Data communication, Network Topologies, Layered Network Architecture- Review of ISO-OSI Model., Transmission Media: Guided and unguided.

UNIT-II

Data Security and Integrity: Parity Checking Code, Cyclic redundancy checks (CRC), Hemming Code, Flow and error control, Go-Back-N protocol, sliding window protocol. Contention Protocol- Stop-Go-Access Protocol.

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BCCA401	DCC	Computer Networks	4	0	0	4	60	20	20	0	0

UNIT-III

Data Link Layer: Simplex, Half duplex and Full duplex, Inter Networking, Layer 1 connections-Repeater, Hubs, Layer 2 connections-Bridges, Switches, Layer 3 connections-Routers, Gateways.

UNIT-IV

Wide Area Network: Introduction, Network routing, least cost routing algorithms, Dijkstra's algorithm, Internetworking.

UNIT-V

Transport and upper layers in OSI Model: Transport layer functions, Network Security, email, Multimedia.

Text Books:

1. A.S.Tanenbaum, "Computer Network", 4th addition, PHI
2. Forouzan "Data Communication and Networking 3ed", TMH
3. J.F.Hayes, "Moduling and Analysis of Computer Communication Networks", Plenum Press
4. D.E.Comer, "Internetworking with TCP/IP", Volume Ist&IInd, PHI
5. Willium Stalling, "Data & Computer communications", Maxwell Macmillan International Ed.
6. D.Bertsekas and R.Gallager,"Data Networks", 2ndEd. ,PHI.
7. G.E. Keiser,"Local Area Networks ", McGraw Hill, International Ed.

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Name of Program: BCA (Big Data Analytics) – IBM

COURSE CODE	CATEGORY	COURSE NAME	L	T	P	CREDITS	TEACHING & EVALUATION SCHEME				
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BCCAIBM401	AEC	Database Management System	3	0	2	4	60	20	20	30	20

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit; Q/A – Quiz/Assignment/Attendance, MST - Mid Sem Test.

***Teacher Assessment** shall be based on following components: Quiz/Assignment/Project/Participation in class (Given that no component shall be exceed 10 Marks)

Course Educational Objectives (CEOs):

- To provide students with basic concepts in information system and the benefits of these systems
- To understand the role, requirement and operations that an analyst needed to analyze, design, and implement the systems
- To provide the knowledge of business data modeling for the designing of efficient information systems
- To explain the various issues related with Data Security.

Course Outcomes (COs): After completing this course the student will be able to:

- Understand the database systems concepts
- Design any Desktop application using an entity relationship diagrams (ERD) to express requirements and demonstrates skills to model data requirements and create data models.
- Apply the knowledge of the subject to any particular database implementation using SQL.
- To learn and understand various Database Architectures and Applications.
- To differentiate between data, information, and knowledge

UNIT-I

Introduction: Introduction to Databases, Purpose of Database System, Database system Vs file system, Database System concepts and architecture, Advantage of DBMS approach, various views of

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Shri Vaishnav Institute of Computer Applications

Name of Program: BCA (Big Data Analytics) in association with IBM

COURSE CODE	CATEGORY	COURSE NAME	L	T	P	CREDITS	TEACHING & EVALUATION SCHEME				
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BCCAIBM401	AEC	Database Management System	3	0	2	4	60	20	20	30	20

data, data independence, schema and subschema and instances, basic concepts of data models, Database languages, Database administrator and users, data dictionary.

UNIT-II

ER model: basic concepts, notation for ER diagram, design issues, Entity types, mapping constraint, Concepts of keys: super, candidate, primary, alternate, foreign, weak and strong entity sets, inheritance. **Domains, Relations and Keys:** domains, relations, kind of relations, relational database, various types of keys, candidate, primary, alternate, super and foreign keys.

UNIT-III

Relational Algebra and SQL: The structure, relational operations, idea of relational calculus.

Relational Calculus: idea of relational calculus, tuple and domain calculus, Domain relational Calculus, calculus vs algebra.

Normalization: Introduction, non-loss decomposition, FD diagram, Normal forms upto fifth normal form, Codd's rules.

UNIT-IV

SQL: Introduction, basic structure of SQL, Characteristics and Advantage of SQL set operations, aggregate functions, null values, SQL data types and literals. SQL operators, Types of SQL commands. Simple and nested queries, views, join relations. Comparison between tables and views, updated views, indexes, clustering. Triggers in SQL.

UNIT-V

Transaction, concurrency and Recovery: basic concepts, ACID properties, Transaction states,

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Implementation of atomicity and durability, concurrency control, deadlock, storage structure types, stable storage implementation, data access, recovery and atomicity- log based recovery, deferred Database modification.

Database Security: Data Classification-Threats and risks – Database access Control – Types of Privileges –Cryptography

Text Books:

1. A Silberschatz, H.F Korth, Sudersan, “Database System Concepts”, 6th Edition, MGH Publication 2013.
2. C.J. Date, “An introduction to Database Systems”, 6th Edition, Pearson 2003.
3. Elmasri&Navathe, “Fundamentals of Database systems”,7th Edition, Pearson 2015.
4. B.C. Desai, “An introduction to Database systems”, BPB.
5. RaghuRamakrishnan, “Database Management Systems”,3rd Edition, TMH 2014.

List of Experiments:

1. To study Basic SQL commands (create database, create table, use, drop, insert) and execute the following queries using these commands:
 - Create a database named „Employee“.
 - Use the database „Employee“ and create a table „Emp“ with attributes „ename“, „ecity“, „salary“, „enumber“, „eaddress“, „deptname“.
 - Create another table „Company“ with attributes „cname“, „ccity“, „empnumber“ in the database „Employee“.
2. To study the viewing commands (select, update) and execute the following queries using

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3. these commands:

- Find the names of all employees who live in Delhi.
- Increase the salary of all employees by Rs.5,000.
- Find the company names where the number of employees is greater than 10,000.
- Change the Company City to Gurgaon where the Company name is TCS".

3. To study the commands to modify the structure of table (alter, delete) and execute the following queries using these commands:

- Add an attribute named Designation "to the table, Emp".
- Modify the table,, Emp", Change the data type of salary "attribute to float.
- Drop the attribute „dept name" from the table,,emp".
- Delete the entries from the table,, Company "where the number of employees are less than 500.

4. To use (and, or, in , not in, between , not between , like , not like) in compound conditions and execute the following queries using them:

- Find the names of all employees who live in,, Gurgaon" and whose salary is between Rs. 20,000 and Rs.30,000.
- Find the names of all employees whose names begin with either letter „A" or „B".
- Find the company names where the company city is,, Delhi" and the number of employees is not between 5000 and 10,000.
- Find the names of all companies that do not end with letter,, A".

5. Using aggregate functions execute the following queries:

- Find the sum and average of salaries of all employees in computer science department.
- Find the number of all employees who live in Delhi.
- Find the maximum and the minimum salary in the HR department.

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6. To execute the following queries using study the grouping commands (group by, orderby)

- List all employee names in descending order.
- Find number of employees in each department where number of employees is greater than 5. List all the department names where average salary of a department is Rs. 10,000.

7. To write SQL queries to

- Alter table „Emp“ and make „enumber“ as the primary key.
- Alter table „Company“ and add the foreign key constraint.
- Add a check constraint in the table „Emp“ such that salary has the value between 0 and Rs. 1,00,000.
- Alter table „Company“ and add unique constraint to column cname.
- Add a default constraint to column ccity of table company with the value Delhi“.
- Rename the name of database to „Employee1“.
- Rename the name of table „Emp“ to „Emp1“.
- Change the name of the attribute ename “to „empname“.

10. To execute following queries using appropriate SQL statements to

- Retrieve the complete record of an employee and its company from both the table using joins.
- List all the employees working in the company „TCS“.

11. To study the various set operations and execute the following queries using these commands:

- List the number of all employees who live in Delhi and whose company is in Gurgaon or if both conditions are true.
- List the number of all employees who live in Delhi but whose company is not in Gurgaon.

12. To study the various scalar functions and string functions (power, square, substring, reverse, upper, lower, concatenation) and execute the following queries using these commands:

- Reverse the names of all employees.

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- Change the names of company cities to uppercase.
 - Concatenate name and city of the employee.
13. To study the commands for views and execute the following queries using these commands:
- Create a view having ename and ecity.
 - In the above view change the ecity to „Delhi “where ename is “John”.
 - Create a view having attributes from both the tables.
 - Update the above view and increase the salary of all employees of IT department by Rs.1000.
14. To study the commands involving indexes and execute the following queries:
- Create an index with attribute ename on the table employee.
 - Create a composite index with attributes cname and ccity on table company.
 - Drop all indexes created on Table Company.

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BCCA403	DCC	Basics of Computer Graphics and Multimedia Concepts	3	0	0	3	60	20	20	0	0

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;

Q/A – Quiz/Assignment/Affendance, MST - Mid Sem Test.

***Teacher Assessment** shall be based on following components: Quiz/Assignment/Project/Participation in class (Given that no component shall be exceed 10 Marks)

Course Educational Objectives (CEOs):

- To provide knowledge about hardware and software used in computer Graphics.
- To impart knowledge about drawing algorithms.
- To provide detailed knowledge about color and intensity levels.
- To acquaint students with windowing and clipping.
- To make the student understanding about Multimedia tools used in graphics.

Course Outcomes (Cos):

- An ability to understand basic knowledge of Computer Graphics.
- An ability to apply knowledge of Computer Graphics.
- An ability to understand the color and intensity levels.
- An ability to identify visible area of any surface.
- An ability to understand Multimedia.

UNIT - I

Devices: Display devices: Random scan and raster scan monitors. Color CRT monitor, Plasma panel, Hard copy devices: Printers and Plotter: Input devices Joysticks, Mouse, Digitizer, Scanner, Camera.

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BCCA403	DCC	Basics of Computer Graphics and Multimedia Concepts	3	0	0	3	60	20	20	0	0

UNIT - II

Introduction to Computer Graphics, Pixel, color and intensity, Types of refresh graphics displays, CRT Raster Scan Basics, Video Basics, Interactive input and output Devices, Raster scan graphics, Line drawing algorithms, Bresenham's algorithm, Scan Conversion.

UNIT - III

Clipping- 2D clipping, line clipping algorithms, Cyrus-Beck algorithm, convex polygon & inward normal, concave clipping, Introduction of 3D clipping, character clipping.

Hidden line and Hidden surface algorithms- Floating horizon, Roberts algorithm, Warnock algorithm, Weiler-Atherton Subdivision algorithm.

UNIT - IV

Rendering, Illumination model, surface normal, reflection vector, shading, transparency, shadows, texture, colour.

UNIT - V

Introduction to multimedia, multimedia components, multimedia hardware, SCSI, IDE, MCI, Multimedia data and file formats, RTF, TIFF, MIDI, JPEG, DIB, MPEG.

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BCCA403	DCC	Basics of Computer Graphics and Multimedia Concepts	3	0	0	3	60	20	20	0	0

Text Books:

1. D.Hearn and M.P. Baker “Computer Graphics” (2nd ed), PHI.
2. S. Harrington – “Computer Graphics - a Programming approach” (2nd ed). McGrawhill.
3. New Mann & Sprovl- “Principles of interactive computer graphics” (2nd ed). McGrawhill.
4. Roger S. David “Procedural Elements for Computer Graphics”, McGraw Hill.
5. Roger S David “Mathematical Elements for Computer Graphics”, McGraw Hill.
6. Foley & Vandan “Computer Graphics Principles & Practice in “C” “Addision Wesly.
7. Tay Vaughan, “Multimedia Making it Work” 5th Ed. 2001, Tata McGraw Hill.
8. Prabhat K. Andleigh & Kiran Thakur “Multimedia System Design”, PHI
9. Drew, “Fundamentals of Multimedia”, Pearsons.
10. Nigel Chapman, J. Chapman “Digital Multimedia” Wiley India.

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Choice Based Credit System (CBCS) in Light of NEP-2020 BBA+MBA - III SEMESTER (2021-2024)

ML307 ENVIRONMENTAL MANAGEMENT AND SUSTAINABILITY

COURSE CODE	CATEGORY	COURSE NAME	TEACHING & EVALUATION SCHEME								
			THEORY			PRACTICAL			CREDITS		
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*	L		T	P
ML307	AECC	Environmental Management and Sustainability	60	20	20	0	0	3	0	0	3

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P - Practical; C - Credit; AECC- Ability Enhancement Compulsory Course

*Teacher Assessment shall be based on following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Objective

1. To create awareness towards various environmental problems.
2. To create awareness among students towards issues of sustainable development.
3. To expose students towards environment friendly practices of organizations.
4. To sensitize students to act responsibly towards environment.

Examination Scheme

The internal assessment of the students' performance will be done out of 40 Marks. The semester Examination will be worth 60 Marks. The question paper and semester exam will consist of two sections A and B. Section A will carry 36 Marks and consist of five questions, out of which student will be required to attempt any three questions. Section B will comprise of one or more cases / problems worth 24 marks.

Course Outcomes

1. The course will give students an overview of various environmental concerns and practical challenges in environmental management and sustainability.
2. Emphasis is given to make students practice environment friendly behavior in day-to-day activities.

COURSE CONTENT

UNIT I: Introduction to Environment Pollution and Control

1. Pollution and its types (Air, Water, and Soil): Causes, Effects and Control measures
2. Municipal Solid Waste: Definition, Composition, Effects
3. Electronic Waste: Definition, Composition, Effects
4. Plastic Pollution: Causes, Effects and Control Measures

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Choice Based Credit System (CBCS) in Light of NEP-2020

BBA+MBA - III SEMESTER (2021-2024)

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ML307	AECC	Environmental Management and Sustainability	60	20	20	0	0	3	0	0	3

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*Teacher Assessment shall be based on following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

UNIT II: Climate Change and Environmental Challenges

1. Global Warming and Green House Effect
2. Depletion of the Ozone Layer
3. Acid Rain
4. Nuclear Hazards

UNIT III: Environmental Management and Sustainable Development

1. Environmental Management and Sustainable Development: An overview
2. Sustainable Development Goals (17 SDGs)
3. Significance of Sustainable Development
4. Environment Friendly Practices At Workplace and Home (Three Rs' of Waste Management, Water Conservation, Energy Conservation)

UNIT IV: Environmental Acts

1. The Water (Prevention and Control of Pollution) Act, 1974: Objectives, Definition of Pollution under this act, Powers and Functions of Boards
2. The Air (Prevention and Control of Pollution) Act, 1981: Objectives, Definition of Pollution under this act, Powers and Functions of Boards
3. The Environment (Protection) Act, 1986: Objectives, Definition of important terms used in this Act, Details about the act.
4. Environmental Impact Assessment: Concept and Benefits

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Name of Program: **BCA (Big Data Analytics) in association with IBM**

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BCCAIBM402	DCC	Big Data Technologies (Hadoop)	3	0	2	4	60	20	20	30	20

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***Teacher Assessment** shall be based on following components: Quiz/Assignment/Project/Participation in class activities, given that no component shall exceed more than 10 marks

Course Education Objectives (CEOs): The objective of this course is to teach students about:

1. To familiarize the students with the need and scope of the subject.
2. Provide an exposure giving a strong foundation to the data analytics practices.
3. Big data computing technologies, Watson studio
4. Understand the challenges posed by distributed applications and how ZooKeeper is designed to Handle.
5. create a basis for the use of advanced investigative and computational methods to convert information to useful knowledge.
6. Develop an understanding of how business analytics is actually performed
7. Develop an understanding of the complete open-source Hadoop ecosystem and its near term future direction
8. Covers foundational techniques and tools required for data science and big data analytics like Hadoop, NoSQL MapReduce, BIGSQL, Watson studio.

Course Outcomes (COs): After the completion of the course the student will be able to:

1. understanding importance and scope of the subject
2. understand the technological foundations of the Big Data
3. differentiate the structured and unstructured data and different databases to store structured and unstructured data like Mongo DB, HBase etc.
4. store and manipulate the different types of data

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Name of Program: BCA (Big Data Analytics) in association with IBM

COURSE CODE	CATEGORY	COURSE NAME	L	T	P	CREDITS	TEACHING & EVALUATION SCHEME				
							THEORY			PRACTICAL	
							END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*
BCCAIBM402	DCC	Big Data Technologies (Hadoop)	3	0	2	4	60	20	20	30	20

5. have a knowledge of HADOOP and Hadoop ecosystem and its uses in Big Data
6. understand and apply the Big Data Analytics
7. Understand the functions and features of HDP.
8. To model and Design Big Data for analytics
9. Understand the MapReduce model v1 and review java code.
10. understand the professional and ethical responsibility
11. to produce the good decision makers who can use empirical approaches, wide range of data analytic techniques to problem solving.

PRE- REQUISITES:

This course requires the familiarity with linear algebra, calculus, matrix operations, probability theory, statistics, programming, Database Management System, Data Mining and Warehousing

Syllabus

Unit I

Big Data: Introduction and basics, Evolution of Data Management, Definition, Importance, Big Data Types, Structured and unstructured Data, Sources of bigstructured data and unstructured data, Architecture of Big Data Management System, Stages of Big Data Management,

Big Data Technology Foundations: Technology Components, virtualization, distributed computing, Cloud and Big Data, Integration of data types into a big data environment.

Unit II

Big Data and operational Databases: relational, non relational, key-value pair, document, column oriented, graph, spatial databases, MapReduce, Hadoop, Hadoop Foundation and Ecosystem, Appliances and Big Data

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Warehouse, Big data Implementation, Big Data Applications. roles in building a complete big data, solution to common business problems.

Hadoop and HDFS: need for a big data strategy in terms of parallel reading of large data files and internode network speed in a cluster, Hadoop Distributed File System (HDFS), function of the NameNode and DataNodes in a Hadoop cluster, files are stored and blocks ("splits") are replicated. Hive, Sqoop.

Unit III

Big Data Analytics: Introduction, Basic and Advanced Analytics, Drivers, Pillars of Analytics: descriptive, predictive and prescriptive. Core Components of analytical data architecture, Performance issues, Parallel vs. distributed processing, Shared nothing data architecture and Massive parallel processing, Elastic scalability, Data loading patterns.

Data Analytics lifecycle: Discovery, Data Preparation, Model Planning, Model Building, Communicating results and findings.

Unit IV

Apache Ambari: The purpose of Apache Ambari in the HDP stack, architecture of Ambari and Ambari' relation to other services and components of a Hadoop cluster, components of Ambari and their functions, initiating start and stop services from Ambari Web Console.

Introduction of Hortonworks Data Platform – HDP: functions and features of HDP, the IBM value-add components, basics of IBM Watson Studio, description of the purpose of the value-add components

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Unit V

MapReduce and YARN: MapReduce model v1, the limitations of Hadoop 1 and MapReduce, handling the Mapper class with Java, Reducer class and the program driver needed to access MapReduce, the YARN model, Hadoop 2/YARN versus Hadoop 1

ZooKeeper, Slider, and Knox: The challenges with distributed applications and how ZooKeeper is designed to handle them, ZooKeeper: role within the Apache Hadoop infrastructure, the realm of Big Data management, real-world applications, services to manage distributed systems, ZooKeeper CLI and ZooKeeper services

TEXT BOOKS:

1. "Introduction to Infosphere BigInsights", IBM Career Education
2. "Changing Business with Data Insight", IBM Career Education
3. "Big Insights Analytics for Business Analysts", IBM Career Education
4. "Hadoop: The Definitive Guide Paperback – 2015" by Tom White, Shroff Publishers & Distributers Private Limited - Mumbai; Fourth edition (2015).
5. "Big Data and Hadoop" by V. K. Jain, Khanna Publishers; 1 edition (1 June 2015)
6. "Big Data for Dummies" by Judith Hurwitz, Alan Nugent, Dr. Fern Halper and Marcia Kaufman Wiley, ISBN: 978-1-118-50422-2, 2013
7. "Data Analytics, Models, Algorithms for Intelligent Data Analysis by Thomas A., Springer Vieweg , ISBN 978-3-8348-2589-6, 2013
8. "Hadoop For Dummies", Dirk deRoos, For Dummies, 2014

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BCCAIBM402	DCC	Big Data Technologies (Hadoop)	3	0	2	4	60	20	20	30	20

REFERENCE BOOKS:

1. “Big Data: A Revolution That Will Transform How We Live, Work, and Think” by Kenneth Cukier, Viktor Mayer-Schönberger; Mariner Books; Edition (2014)
2. “Big Data: Using Smart Big Data, Analytics and Metrics to Make Better” by Bernard Marr; Wiley; Edition 1st (2015)
3. “Mining of Massive Datasets, Chapter 2”, by Ullman, Rajaraman,
4. “MapReduce and Parallel DBMS” by Stonebraker et al.; Friends or Foes?, Communications of the ACM, January 2010.
5. “MapReduce: A Flexible Data Processing Tool” by Dean and Ghemawat, Communications of the ACM, January 2010.

List of Practical:

1. Installation and configuring Hadoop, configuring HDFS,
2. Installation of Zookeeper, Pig, Sqoop and Hbase
3. Running jobs on Hadoop
4. Working on HDFS
6. Hadoop streaming
7. Creating Mapper function using python.
8. Creating Reducer function using python
9. Python iterator and generators
10. Twitter data sentimental analysis using Flume and Hive
11. Business insights of User usage records of data cards
12. Wiki page ranking with Hadoop
13. Health care Data Management using Apache Hadoop ecosystem

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Name of Program: BCA + MCA/ BCA + MCA (Banking Technology)/ BCA (BDA)

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BCCA405	DCC	System Analysis and Design	3	0	0	3	60	20	20	0	0

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;

Q/A – Quiz/Assignment/Attendance, MST - Mid Sem Test.

***Teacher Assessment** shall be based on following components: Quiz/Assignment/Project/Participation in class (Given that no component shall be exceed 10 Marks)

Course Educational Objectives (CEOs):

- To introduce established and evolving methodologies for the analysis, design, and development of an information system.

Course Outcomes (Cos):The students should be able to:

- Understand system characteristics, project management, prototyping, and systems development life cycle phases.
- analyze a problem and design an appropriate solution using a combination of tools and techniques

UNIT-I

Overview of system analysis and design: Systems concepts, Definition, Characteristics of a system, Elements of a system, Types of Systems: Physical or Abstract System. Open or Closed Systems. Man-Made Information Systems: Categories of Information, Formal Information Systems, Informal Information Systems.

UNIT-II

System Development Life Cycle: Recognition of need, Feasibility study, Analysis, Design, Implementation, Post implementation and Maintenance, Project Termination, Prototyping, Role of the system Analyst: Definition, Skills, Academic and Personal Qualifications.

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BCCA405	DCC	System Analysis and Design	3	0	0	3	60	20	20	0	0

UNIT-III

System Analysis: Systems Planning and the Initial Investigation- Initial Investigation: Needs Identification, Strategies for Determining Information Requirements, Problem Definition and Project Initiation.

Structured Analysis: Introduction, Tools of Structured Analysis: Dataflow Diagrams, Data Dictionaries, Decision Tables, Decision Trees, Structured English.

Feasibility study: Introduction, Feasibility Considerations, Feasibility Study Stages, Feasibility Report, Cost/Benefit Analysis.

UNIT-IV

System Design: The Process and Stages of System Design: Introduction, The Process of Design: Logical and Physical Design, Design Methodologies: Structured Design, Form-Driven Methodology- The IPO Charts.

Input/ Output and Forms Design: Introduction, Input Design, Output Design, Forms Design.

File Organization and Data Base Design: Introduction, File Structure, File Organization, Data

Base Design, Views of Data.

UNIT-V

System implementation, Post Implementation and Maintenance: Introduction, Testing objectives, Types of Testing, Quality Assurance: Quality Factors specifications, Levels of Quality Assurance, Post Implementation and Maintenance.

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Text Books:

1. Elias M. Awad, System Analysis and Design, GALGOTIA Publications.
2. Joseph S. Valacich, Joey F. Grogger & Jeffrey A. Hoffer, Essentials of Systems Analysis and Design, 2004.
3. V. Rajaraman, Analysis and Design of Information Systems, III Edition, 2014.

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