Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore

Shri Vaishnav Institute of Computer Applications

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*
BCCA601	SEC	Advanced Java	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 exceed 10 Marks)

Course Education Objectives (CEOs):

This course covers the implementation of advanced program designs with the tools available in the Java programming language. After a detailed review of the fundamentals, advanced topics will include the Graphical User Interface (GUI) for applications, 2D graphics, multimedia, multithreading and client-server models for networking and database connectivity. If time and interest permits, the class may introduce the Java tools for generics and collections.

Course Outcomes (COs):

Students will build on their understanding of Object-Oriented Design (OOD) and Programming (OOP) in Java and learn to write robust, Graphical User Interface (GUI) applications and applets. Students will gain a practical familiarity with 2D graphics, multimedia, programming for concurrency, networking and database connectivity. Students may investigate programming for Web Services, if time and interest permits.

Syllabus:

UNIT – I
Java Networking: Network Basics and Socket overview, TCP/IP client sockets, URL, TCP/IP server sockets, Datagrams, java.net package Socket, ServerSocket, InetAddress, URL, URLConnection.

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BCCA601	SEC	Advanced Java	3	0	0	3	60	20	20	0	0

JDBC Programming: The JDBC Connectivity Model, Database Programming: Connecting to the Database, Creating a SQL Query, Getting the Results, Updating Database Data, Error Checking and the SQL Exception Class, Statement Interface, Prepared Statement, Callable Statement, ResultSet Interface, Updatable Result Sets, JDBC Types, Executing SQL Queries, Executing SQL Updates.

UNIT - II

Servlet API and Overview: Servlet Model: Overview of Servlet, Servlet Life Cycle, HTTP Methods Structure and Deployment descriptor ServletContext and ServletConfig interface, Attributes in Servelt, Request Dispatcher interface The Filter API: Filter, FilterChain, Filter Config Cookies and Session Management: Understanding state and session, Understanding Session Timeout and Session Tracking, URL Rewriting.

UNIT – III

Java Server Pages: JSP Overview: The Problem with Servlets, Life Cycle of JSP Page, JSP Processing, JSP Application Design with MVC, JSP Directives, JSP Action, JSP Implicit Objects, JSP Form Processing, JSP Session and Cookies Handling, JSP Session Tracking JSP Database Access, JSP Standard Tag Libraries, JSP Custom Tag, JSP Expression Language, JSP Exception Handling, JSP XML Processing.

UNIT – IV

Java Server Faces2.0: Introduction to JSF, JSF request processing Life cycle, JSF Expression Language, JSF Standard Component, JSF Facelets Tag, JSF Convertor Tag, JSF Validation Tag, JSF Event Handling and Database Access.

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BCCA601	SEC	Advanced Java	3	0	0	3	60	20	20	0	0

UNIT – V

Hibernate4.0: Overview of Hibernate, Hibernate Architecture, Hibernate Mapping Types, Hibernate O/R Mapping, Hibernate Annotation.

Java Web Frameworks: Spring MVC: Overview of Spring, Spring Architecture, bean life cycle, XML Configuration on Spring, Aspect – oriented Spring, Managing Database, Managing Transaction

Text Books:

1. Patrick Naughton and Herbertz Schildt, "Java-2: The Complete Reference", TMH, 7th edition, 2002.
2. Jim Keogh, "J2EE: The complete Reference", McGraw-Hill Education (India) Pvt Limited, Edition 1.
3. Rick Darnell, "HTML 4 unleashed", Techmedia Publication, 2000
4. Paul Dietel and Harvey Deitel, "Java How to Program", PHI, 8th edition, 2010.

Reference Books:

1. E. Balagurusamy, "Programming with Java: A Primer", TMH, 1998.
2. N.P. Gopalan and J. Akilandeswari, "Web Technology- A Developer's Perspective", PHI, 2nd edition
3. Eric Jendrock, Jennifer Ball, Debbie Carson, "The Java EE5 Tutorial", Pearson, 3rd edition, 2007.

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BCCA602	DCC	Internet Programming	3	1	0	4	60	20	20	0	0

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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 exceed 10 Marks)

Course Educational Objectives (CEOs):

- To provide an introduction to the fundamental concepts of JavaScript.
- To familiarize with JSP, Servlets and PHP.

Course Outcomes (COs): The student will be able to:

- Learn about basic Internet Knowledge.
- Understand how to do the client side programming using JavaScript.
- Learn the Server Side programming using JSP and Servlets.
- Develop dynamic web pages using PHP.

Syllabus:

UNIT-I

Internet Basics:

Communication using the Internet: Internet and its history, Basic of Computer networks; LAN, WAN, OSI and TCP Network Models, Concept of Internet, Applications of Internet, Connecting to Internet, What is ISP, Knowing the Internet.

WWW and Web Browsers: Hypertext and hyperlinks, World Wide Web; Web Browsing

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BCCA602	DCC	Internet Programming	3	1	0	4	60	20	20	0	0

softwares, Search Engines; Understanding URL; Domain name; IP Address;

UNIT-II

Client Side Programming:

JAVA Script: Introduction to Java Script, Identifier & operators, control structures, functions Document Object Model (DOM), DOM Objects (window, navigator, history, location), Predefined functions, numbers and string functions, Array in Java scripts,Event handling in Java script.

UNIT-III

Server Side Programming:

Servlets: Java Servlet Architecture- Servlet Life Cycle- Form GET and POST actions, Session Handling- Understanding Cookies- Installing and Configuring Apache Tomcat Web Server.

JSP: Understanding Java Server Pages-JSP Standard Tag Library (JSTL)-Creating HTML forms by embedding JSP code.

UNIT-IV

Introduction to PHP

Introduction to PHP, Data Types, Variables, Expressions and Operators, Flow-Control Statements, Including Code, Embedding PHP in Web Pages, Functions, Variable Functions, Anonymous

Functions, Strings, String Manipulation, Regular Expressions, Arrays, Multidimensional Arrays,

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BCCA602	DCC	Internet Programming	3	1	0	4	60	20	20	0	0

UNIT-V

Traversing Arrays, Sorting, Acting on Entire Arrays.

Data Access & Error Handing

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.

Reference Books:
1. Learning PHP, MySQL, Javascript, CSS and HTML-Robin Nixon, Fourth Edition
2. Web Technology and design – C Xavier, New Age International,2007
3. PHP: The Complete Reference-Steven Holzner, 1 July 2017.
4. Head First Servlet and JSP, Bryan Basham, Kathy Sierra, and Bert Bates, 2nd Edition.

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BCCA603N	DCC	Fundamentals of Software Engineering	3	0	0	3	60	20	20	0	0

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Course Education Objectives (CEOs):

- To provide knowledge about system development.
- To impart knowledge about software process models.
- To provide detailed knowledge about software design.
- To acquaint students with software quality and testing.

Course Outcomes (COs): Students will be having:

- An ability to understand system design and its constraints.
- An ability to apply knowledge of software engineering.
- An ability to design a system, a component or process to meet desired needs.
- An ability to identify, formulate and solve engineering Problems
- An ability to measure and to understand quality issues.

Syllabus:

UNIT- I
Introduction: Definition of software and software engineering, Software myths, Software Engineering paradigms: Linear Sequential Model and Prototyping Model. Software Project Management, Software Metrics, Software Cost Estimation, Software Project Planning.

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BCCA603N	DCC	Fundamentals of Software Engineering	3	0	0	3	60	20	20	0	0

UNIT -II

Software Requirement Analysis: Software Risks, Software Configuration Management, System Analysis, Modelling the System Architecture, System Specification, Fundamentals of Requirement Analysis, Software Prototyping, Prototyping methods and tools specification Software requirements Specifications

UNIT -III

Structured Analysis: Introduction, elements of Analysis model, data objects, attributes and relationships, Cardinality and Modality, ERD, DFD. Classical Analysis Methods: DSSD, JSD, SADT.

UNIT- IV

Design Concepts – Design Model – Software Architecture – Architectural Styles – Architectural Design – Component-Level Design – User Experience Design – Design for Mobility – Pattern Based Design.

UNIT- V

Software Testing Strategy – Unit Testing – Integration Testing – Validation Testing – System Testing – Debugging – White-Box Testing – Basis Path Testing – Control Structure Testing – Black-Box Testing – Software Configuration Management (SCM) – SCM Repository – SCM Process – Configuration Management for Web and Mobile Apps.

Text Books:
1. Roger S. Pressman, Software Engineering – A Practioner's Approach, McGraw Hill, 7th Edition.
2. Pankaj Jalote, An Integrated Approach to Software Engineering, Third Edition.

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BCCA603N	DCC	Fundamentals of Software Engineering	3	0	0	3	60	20	20	0	0

Reference Books:

1. Richard Fairley , Software Engineering – Design Reliability and Management.
2. Sommerville, Software Engineering, Pearson Education, 7th Edition.
3. Elias M. Awad, "System Analysis & Design", Galgotia publications

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BCCA604	DCC	Design and Analysis of Algorithm	3	1	0	4	60	20	20	0	0

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Course Educational Objectives (CEOs):
- To familiarize the students with the need and scope of the subject.
- To develop the analytical skills of students so that they can better understand the problem and devise algorithms efficiently.
- Using simple and well drawn illustrations develop their analytical and programming skills.
- To cover the various data structures and their applications so that aspirants can explore this territory
- to take on the more challenging concepts.

Course Outcomes (COs): After the completion of the course the student will be able to
- understand the real world problems and model them
- understand the algorithms and the algorithm design process
- choose a suitable strategy to devise solution of a given problem
- identify, formulate and solve programming problems
- select appropriate data structures for the solution of a given problem
- analyze the algorithms for correctness and in terms of complexity for best, worst and average cases
- function on multi-disciplinary teams
- understand the professional and ethical responsibility

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BCCA604	DCC	Design and Analysis of Algorithm	3	1	0	4	60	20	20	0	0

Syllabus:

UNIT-I
Pre-requisites: Data structure and Discrete structures, models of computation, Introduction to Algorithm: Definition, Criteria of Algorithm, Algorithm Analysis, Time and Space complexity, asymptotic notation: Big Oh, Omega and Theta, Best, Average and Worst case analysis.

UNIT-II
Design of Algorithm, Types of algorithm strategies, Recurrence relation, Analysis of algorithm, Brute-force approach: Sequential search, Selection sort
Divide and conquer: Structure of divide-and-conquer algorithms: examples; Binary search, Merge sort, Quick sort, Strassen's Multiplication; Analysis of divide and conquer methods

UNIT-III
Graph searching and Traversal: Overview, Traversal methods (depth first and breadth first search)
Greedy Method: Overview of the greedy paradigm examples of exact optimization solution (minimum cost spanning tree), Approximate solution (Knapsack problem), Single source shortest paths.

UNIT-IV
Branch and bound: LC searching Bounding, FIFO branch and bound, LC branch and bound application: 0/1 Knapsack problem, Traveling Salesman Problem, searching & sorting algorithms.

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Dynamic programming: An Overview, Difference between Dynamic Programming, Divide And

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BCCA604	DCC	Design and Analysis of Algorithm	3	1	0	4	60	20	20	0	0

Conquer, Applications: Shortest Path in Graph, Matrix Chain Multiplication, Traveling Salesman Problem, Longest Common Sequence.

UNIT-V

Back tracking: Overview, 8-queen problem and Knapsack problem.

Computational Complexity: Complexity measures, Polynomial Vs non-polynomial time complexity; NP-hard and NP-complete classes, Relation among P, NP, NPC and NPH, Examples.

Text Books:
1. Ullman, "Analysis and Design of Algorithm", TMH, III Edition
2. Goodman, "Introduction to the Design & Analysis of Algorithms, TMH-2002.
3. Sara Basse, A. V. Gelder, "Computer Algorithms," Addison Wesley, III Edition, 1999
4. T. H. Cormen, Leiserson, Rivest and Stein, "Introduction of Computer algorithm," PHI, II Edition, 2002
5. E. Horowitz, S. Sahni, and S. Rajsekaran, "Fundamentals of Computer Algorithms," Galgotia Publication, II Edition, 2008

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							END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*
BCCA612	DSE	Advanced DBMS	4	0	0	4	60	20	20	0	0

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Course Educational Objectives (CEOs):
- To familiarize the students with the need and scope of the subject.
- to prepare the students so that they can handle the data needed for different organizations
- To develop better understanding of the recent advancements in the field of Database Management System.
- Using simple and well drawn illustrations to develop students skills for data storage and retrieval to support the decision making process.

Course Outcomes (COs): The student will be able to
- understand the different issues involved in the design and implementation of a database system.
- understand and use the concepts of database designs and database models to solve real world problems
- develop an understanding of essential DBMS concepts such as: database security, integrity, concurrency, distributed database and intelligent database, Client/Server etc.
- apply the concepts of transaction processing for safe and secure transactions in different scenarios
- design and demonstrate the different kind of databases and use backup and recovery provisions

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BCCA612	DSE	Advanced DBMS	4	0	0	4	60	20	20	0	0

UNIT-I

Advanced Transaction Processing: Advanced transaction models: Save points, Nested and Multilevel Transactions, Compensating Transactions, Long Duration Transactions, Transaction Work Flows, Transaction Processing Monitors, Shared disk systems.

UNIT-II

Objected Oriented and Object Relational Databases: Modeling Complex Data Semantics, Specialization, Generalization, Aggregation and Association, Objects, Object Identity and its implementation, Clustering, Equality and Object Reference, Architecture of Object Oriented and Object Relational databases, Persistent Programming Languages, Cache Coherence.

UNIT-III

Parallel and Distributed Databases: Parallel architectures, shared nothing/shared disk/shared memory based architectures, Data partitioning, Intra-operator parallelism, pipelining. Distributed Data Storage – Fragmentation and Replication, Location and Fragment Transparency, Distributed Query Processing and Optimization, Distributed Transaction Modeling and concurrency Control, Distributed Deadlock, Commit Protocols, Design of Parallel Databases.

UNIT-IV

Active Database and Real Time Databases: Issues with Real time databases, Triggers in SQL, Event Constraint and Action: ECA Rules, Query Processing and Concurrency Control, Compensation and Databases Recovery, multi-level recovery.

UNIT-V

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BCCA612	DSE	Advanced DBMS	4	0	0	4	60	20	20	0	0

Image and Multimedia Databases: Modeling and Storage of Image and Multimedia Data, Data Structures – R-tree, k-d tree, Quad trees, Content Based Retrieval: Color Histograms, Textures etc., Image Features, Spatial and Topological Relationships, Multimedia Data Formats, Video Data Model, Audio and Handwritten Data, Geographic Information Systems (GIS).

WEB Database: Accessing Databases through WEB, WEB Servers, XML Databases.

Text Books:
1. Carlos Coronel and Steven Morris, "Database Systems: Design, Implementation, & Management",Cengage Learning, 13 edition ,January 1, 2018
2. Rob, Coronel "Data Base Systems: Design Implementation & Management", CengageLearninig, 11th edition, February 4, 2014.
3. Raghu Ramakrishnan, "Database Management System" McGraw Hill, 3rd Edition, 16 June 2014
4. Korth, Silbertz, Sudarshan, "Fundamental of Database System", McGraw Hill Education; Sixth edition (1 December 2013)

Reference Books:
1. Ramez Elmasri, Shamkant B. Navathe, "**Fundamentals of Database Systems",** Pearson; 7 edition June 18, 2015.

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BCCA622	DSE	Cloud Computing	4	0	0	4	60	20	20	30	20

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Course Outcomes (COs):

The goal of this course is to provide students with an understanding of basic concepts of cloud computing, various features along with cloud management, its applications and cloud security.

Course Outcomes: After course completion Students will be able to understand:

1. Concept of cloud computing with broader perspectives like requirement, advantages, characteristics, Cloud Service Model and Deployment Model,

2. Cloud Management, Interoperability, Standards, Scalability and Cloud Virtualization Technology Management.

3. Cloud Information security requirement, services and challenges.

UNIT- I

Basics of Cloud Computing: Introduction, Historical development, principles and vision, Cloud services requirements, Types of Clouds, Advantages and disadvantages of cloud computing, Characteristics of Cloud Computing, key elements in adopting cloud.

UNIT- II

Architecture for Cloud Computing: Cloud Computing Environments, Characteristics of

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cloud computing as per National Institute of Standard and Technology, Concepts of

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BCCA622	DSE	Cloud Computing	4	0	0	4	60	20	20	30	20

Deployment Models and Service Models, Cloud Interoperability & Standards, Scalability and Fault Tolerance.

UNIT-III

Cloud Management: Resiliency, Provisioning, Asset management, Concepts of Map reduce.

Virtualization Technology: Introduction, working process of virtualization and benefits of virtualization, Hardware Virtualization and Software Virtualization.

UNIT-IV

Types of Virtualizations- Memory Virtualization, Storage Virtualization, Data and Network Virtualization, Desktop and Application virtualization, Technology used for virtualization, Hypervisor Virtualization Software, concept of Virtual LAN(VLAN) and Virtual SAN(VSAN).

UNIT -V

Cloud Security: Introduction of cloud Information security services, Design principles, Secure Cloud Software Requirements, Policy Implementation, and Security Challenges.

Case study of cloud computing platforms: Google App Engine, Microsoft Azure, Amazon Web Services.

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BCCA622	DSE	Cloud Computing	4	0	0	4	60	20	20	30	20

Textbooks:

1. Judith S. Hurwitz, Daniel Kirsch" Cloud Computing For Dummies, 2nd Edition, John Wiley and Sons inc., New Jersey, 2000.
2. Hashmi, Tahir, Landreau, Jean-Francois" Cloud Strategy: A Decision-based Approach to cloud migration" Gregor Hohpe: An architect Elevator Guide,2019-2020.
3. Kavis, Michael J. "Architecting the Cloud: Design Decisions for Cloud Computing Service Models (SaaS, PaaS, and IaaS) John Wiley and Sons inc., Hoboken, New Jersey, 2000.
4. Mr. Ray J Rafaels "Cloud Computing: From Beginning to End" Second edition, paperback,2018.

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BCCA632	DSE	Data Analytics	4	0	0	4	60	20	20	30	20

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*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 familiarize the students with the need and scope of the subject.
- Provide an exposure giving a strong foundation to the data analytics practices.
- create a basis for the use of advanced investigative and computational methods to convert information to useful knowledge.
- To develop an understanding of how business analytics is actually performed
- covers foundational techniques and tools required for data science and big data analytics.

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

- Understand the basic concepts of Statistical tool.
- Understand the concepts of Bigdata and Hadoop
- Understand the concepts of Big data analytics
- Understand the concepts of Machine Learning
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PRE- REQUISITES:

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

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							THEORY			PRACTICAL	
							END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*
BCCA632	DSE	Data Analytics	4	0	0	4	60	20	20	30	20

UNIT-I

Measures of Central Tendency: Mean, Median, Range, Mode, Variance, Standard deviation. **Correlation and Regression:** Linear Correlation, Correlation and Causality, Linear Regression, Linear Regression with Nonlinear Substitution.

UNIT-II

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

UNIT-III

Big Data Technology Foundations: Technology Components, virtualization, distributed computing, Cloud and Big Data, Integration of data types into a big data environment. **Introduction to Hadoop**: Hadoop Foundation and Ecosystem, Appliances and Big Data Warehouse, Big data Implementation, Big Data Applications.

UNIT –IV

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.

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UNIT-V

Machine Learning, supervised and unsupervised learning, Classification, Classification Criteria, Naive Bayes Classifier, use of regression and classification, Support Vector Machine, Unsupervised Learning and Challenges for Big Data Analytics, Clustering, Association Rule Mining.

Text Books:

1. "Big Data For Dummies" by Judith Hurwitz, Alan Nugent, Fern Halper, Marcia Kaufman, Wiley, ISBN: 978-1- 118-50422-2, 2013.
2. "Data Analytics, Models and Algorithms for Intelligent Data Analysis" by Runkler, Thomas A., Springer Vieweg , ISBN 978-3-8348-2589-6, 2013.
3. "Big Data Analytics with R and Hadoop", by Vignesh Prajapati, Packt Publication, ISBN 978-1-78216-328-2, 201.
4. "The Elements of Statistical Learning" by Hastie, Trevor, et al. Vol. 2. No. 1. New York: springer, 2009.
5. "Applied Statistics and Probability for Engineers" by Montgomery, Douglas C., and George C. Runger., John Wiley & Sons, 2010.
   "Data Science and Big Data Analytics Student Guide" distributed by EMC Education Services

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							THEORY			PRACTICAL	
							END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*
BCCA606	SEC	Software Development-Minor Project - I JAVA Based	0	0	4	2	0	0	0	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 Education Objectives (CEOs):

This course covers the implementation of advanced program designs with the tools available in the Java programming language. After a detailed review of the fundamentals, advanced topics will include the Graphical User Interface (GUI) for applications, 2D graphics, multimedia, multithreading and client-server models for networking and database connectivity. If time and interest permits, the class may introduce the Java tools for generics and collections.

Course Outcomes (COs):

Students will build on their understanding of Object-Oriented Design (OOD) and Programming (OOP) in Java and learn to write robust, Graphical User Interface (GUI) applications and applets. Students will gain a practical familiarity with 2D graphics, multimedia, programming for concurrency, networking and database connectivity. Students may investigate programming for Web Services, if time and interest permits.

							TEACHING & EVALUATION SCHEME				
							THEORY			PRACTICAL	
							END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*
BCCA606	SEC	Software Development- Minor Project - I JAVA Based	0	0	4		0	0	0	30	20

Text Books:

1. Patrick Naughton and Herbertz Schildt, "Java-2: The Complete Reference", TMH, 5th edition, 2002.
2. Bill Venners, "Inside Java Virtual Machine", TMH, 2nd edition.
3. Rick Darnell, "HTML 4 unleashed", Techmedia Publication, 2000
4. Shelley Powers, "Dynamic Web Publishing", 2nd edition, Techmedia, 1998.
5. Paul Dietel and Harvey Deitel, "Java How to Program", PHI, 8th edition, 2010.

Reference Books:

1. E. Balagurusamy, "Programming with Java: A Primer", TMH, 1998.
2. Horstmann, "Computing Concepts with Java 2 Essentials", John Wiley.
3. Decker and Hirshfield, "Programming Java: A Introduction to Programming Using JAVA", Vikas Publication, 2000.
4. N.P. Gopalan and J. Akilandeswari, "Web Technology- A Developer's Perspective", PHI, 2nd edition
5. Eric Jendrock, Jennifer Ball, Debbei Carson, "The Java EE5 Tutorial", Pearson, 3rd edition, 2007.
6. Daniel Liang, "Introduction to Java Programming", Pearson, 7th edition, 2010.

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							THEORY			PRACTICAL	
							END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*
BCCA607	DCC	Internet Programming Lab	0	0	4	2	0	0	0	30	20

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

*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 Educational Objectives (CEOs):

- To provide an introduction to the fundamental concepts of JavaScript.
- To familiarize with JSP, Servlets and PHP.

Course Outcomes (COs): The student will be able to:

- Learn about basic Internet Knowledge.
- Understand how to do the client side programming using JavaScript.
- Learn the Server Side programming using JSP and Servlets.
- Develop dynamic web pages using PHP

List of Experiments:

1. JavaScript Program to Add Two Numbers.
2. JavaScript Program to Find the Square Root.
3. JavaScript Program to Calculate the Area of a Triangle.
4. Javascript Program to Check if a Number is Odd or Even.
5. JavaScript Program to Find the Factorial of a Number.
6. Demonstrative Examples on Event Handling in JavaScript.
7. Write Servlet application to print current date & time.
8. Html & Servlet Communication example.
9. Demonstrate JSP implicit object.
10. Demonstrate JSP login Application.

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BCCA607	DCC	Internet Programming Lab	0	0	4	2	0	0	0	30	20

11. Write PHP program to print "Hello World" on the screen.
12. Write PHP program to create a variable and assign value to the variable.
13. Make a program using operators in PHP.
14. Write a program using If…Else statement.
15. Write a program using Numeric array, Associate array and Multidimensional array
16. Write a program using While, for and do…while looping statement.
17. Write a program using switch statement.
18. Write a program that writes name when function is called.
19. Create a Form using PHP.
20. Create a connection to a MYSQL database.
21. Create an ODBC connection.
22. Make one application using PHP for select, Insert, Update and Delete from the Database.

Reference Books:

1. Learning PHP, MySQL, Javascript, CSS and HTML-Robin Nixon,Fourth Edition
2. Web Technology and design – C Xavier, New Age International,2007
3. PHP: The Complete Reference-Steven Holzner, 1 July 2017.
4. Head First Servlet and JSP, Bryan Basham, Kathy Sierra, and Bert Bates, 2nd Edition.

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