Sacred Heart College (Autonomous)

Department of Computer Science

BCA (Mobile Applications and Cloud Technology)

Course Plan

Academic Year: 2018-19

Semester III

COURSE STRUCTURE

COURSE CODE	TITLE OF THE COURSE	NO. OF HRS./WEEK	CREDITS	TOTAL HRS./SEM
U3CRBCA7	BASIC STATISTICS	4	4	72
U3CRBCA8	SOFTWARE ENGINEERING	4	3	72
U3CRBCA9	RDBMS	4	3	72
U3CRBCA10	COMPUTER NETWORKS	4	3	72
U3CRBCA11	PROGRAMMING IN JAVA	4	3	72

COURSEPLAN: U3CRBCA7-BASIC STATISTICS

PROGRAMME	**BCA (MOBILE APPLICATIONS AND CLOUD TECHNOLOGY)**	**SEMESTER**	**3**
COURSE CODE AND TITLE	**U3CRBCA7: BASIC STATISTICS**	**CREDIT**	**4**
HOURS/WEEK	**4**	**HOURS/SEM**	**72**
FACULTY NAME	**MS. RESHMI A.N**		

COURSE OBJECTIVES
To understand different measures of central tendency, their properties and different measures of positional averages.
To understand different measures of dispersions – absolute and relative measures of dispersion and Understand the concepts of Box plots and Lorenz curve.
To understand the concepts of Probability and approaches to Probability
To learn and apply the concept of Index Numbers able to calculate different types of Index Numbers
To analyse Time Series data by Determining Trend ,Seasonal Indices using different methods like method of simple averages and Moving Average

SESSION	**TOPIC**	**LEARNING RESOURCES**	**VALUE ADDITIONS**	**REMARKS**
1	Bridge course	Lecture	video	
2	Bridge course	Lecture	e-resource	
3	Measures of central tendency	Lecture		
4	Mean	Lecture		
5	median	Lecture		
6	Mode	Lecture		
7	Geometric mean , problems	Lecture		
8	Harmonic mean	Lecture		
9	PROBLEMS ON MEAN , MEDIAN	Lecture		
10	PROBLEMS ON MODE, GM	Lecture		
11	PROBLEMS ON HARMONIC MEAN	PPT/Lecture		
12	REVISION	Lecture		
13	Class test	Lecture		

14	Partition values	Lecture		
15	Quartiles	Lecture		CO 2
16	percentiles	Lecture		CO 2
17	Deciles	Lecture		
18	Problems	Lecture		
19	Absolute measures of dispersion and Relative measures of dispersion	Lecture		
20	Range, Quartile Deviation	Lecture		
21	Mean Deviation	Lecture		
22	Standard Deviation	Lecture		
23	Standard Deviation	Lecture		
24	Properties, Problems	Lecture		
25	deciles, percentiles	Lecture		
26	Problem discussion	Lecture		
27	Coefficient of variation	Lecture		
28	Problems	Lecture		
29	Correlation and Regression	PPT/Lecture		
30	Pearson Correlation Coefficient	PPT/Lecture		
31	Rank Correlation Coefficient	PPT/Lecture		
32	Regression equations	Lecture		
33	Box Plot	Lecture		
34	CIA 1			
35	Idea of Permutations and Combinations	Lecture		
36	Probability Concepts	Lecture	Quiz	
37	Random Experiment, Sample Space	Lecture	Q & Ans Session	
38	Events, Probability Measure	Lecture		
39	Approaches to Probability- Classical	Lecture		
40	Approaches to Probability- Statistical	Lecture		
41	Approaches to Probability- Axiomatic	Lecture		
42	Addition Theorem - TWO EVENTS	Lecture		
43	Addition Theorem- THREE EVENTS	Lecture		
44	Problems	Lecture		
45	Conditional Probability	Lecture		
46	extra problems	Lecture		
47	revision	Lecture		
48	Independence of events	Lecture		
49	Multiplication theorem - TWO EVENTS	Lecture		
50	Problems	Lecture		
51	Multiplication theorem - THREE	Lecture		

	EVENTS			
52	Problems	Lecture		
53	Total Probability Law	Lecture		
54	Baye's Theorem	Lecture		
55	Applications of Baye's Theorem	Lecture		
56	Extra questions	Lecture		
57	Introduction to Index Numbers	Lecture		
58	definition and basic concepts	Lecture		
59	Simple Index Numbers	Lecture		
60	Weighted Index Numbers	Lecture		
61	problems	Lecture		
62	Laspeyer's Index Number	Lecture		
63	Paasche's Index Numbers	Lecture		
64	Fisher's Index Numbers	Lecture		
65	Test of Index Numbers	Lecture		
66	Construction of Index Numbers	PPT/Lecture		
67	Cost of Living Index Number	PPT/Lecture		
68	Family Budget Method	PPT/Lecture		
69	Aggregate Expenditure Method.	Lecture		
70	Time Series – Components of time series	Lecture		
71	Measures of time series Analysis.	Lecture		
72	CIA 2			

INDIVIDUAL ASSIGNMENTS/SEMINAR – Details & Guidelines

	Assignments
1	Diagrammatic and graphical representation using (excel/R) software (Bar Diagram, pie chart. Histogram, ogives, etc)
2	Correlation and regression , trend line using statistical soft wares

CORE REFERENCE

1. S.P. Gupta: Statistical Methods (Sultan Chand & Sons Delhi).
2. S.C. Gupta and V.K. Kapoor: Fundamentals of Mathematical Statistics, Sultan Chand and Sons.

ADDITIONAL REFERENCES

1. Parimal Mukhopadhya: Mathematical Statistics, New Central Book Agency (p) Ltd, Calcutta
2. Murthy M.N.: Sampling theory and Methods, Statistical Publishing Society, Calcutta.
3. Agarwal: Basic Statistics

COURSEPLAN:U3CRBCA8- SOFTWARE ENGINEERING

PROGRAMME	**BACHELOR OF COMPUTER APPLICATIONS**	**SEMESTER**	**3**
COURSE CODE AND TITLE	**U3CRBCA8: SOFTWARE ENGINEERING**	**CREDIT**	**3**
HOURS/WEEK	**4**	**HOURS/SEM**	**72**
FACULTY NAME	**CHRISTY JACQUELINE**		

COURSE OBJECTIVES
To understand professional, ethical and social responsibility of a software engineer
To demonstrate the current models, techniques that provides a basis for the software life cycle
To demonstrate the use of techniques and tools for engineering practice.
To evaluate the impact of potential solutions to software engineering problems in a global society
To apply the foundations in software engineering to adapt to changing environments using appropriate theory, principles and processes

SESSION	**TOPIC**	**LEARNING RESOURCES**	**VALUE ADDITIONS**	**REMARKS**
	MODULE I			
1	Introduction to Software Engineering paradigm	PPT		
2	Verification, validation	PPT/Lecture		
3	Introduction Lifecycle Models	PPT/Lecture	Video	
4	Prototyping Models	PPT/Lecture		
5	Comparison between Prototyping models	PPT/Lecture		
6	Comparison between Lifecycle models	PPT/Lecture		
7	Software Process Model	Lecture		
8	Challenges of Software Engineering	Lecture		
9	Verification Vs Validation	Lecture		
10	System Engineering	Lecture	E-resource	
11	Computer Based System	PPT/Lecture		
12	Business Process engineering	PPT/Lecture		

13	Product Engineering Overview	PPT/Lecture	E-resource	
14	System Engineering	PPT/Lecture		
	MODULE II			
15	Introduction to Functional Requirements	PPT/Lecture		
16	Types of Functional Requirements	Lecture		
17	Non Functional Requirements	Lecture		
18	Types of Non-functional Requirements	Lecture		
19	Software Document	Lecture		
20	Need for Software Document	PPT/Lecture		
21	Requirement Engineering Process	PPT/Lecture		
22	Feasibility study	PPT/Lecture		
23	Need for Feasibility study	PPT/Lecture		
24	Introduction to Software Prototyping	Lecture		
25	Types of prototyping models	Lecture		
26	CIA-1			
27	Prototyping in the software process	Lecture		
28	Data Models	Lecture		
29	Functional Models	PPT/Lecture		
30	Behavorial models	PPT/Lecture		
31	Structured Anlaysis	PPT/Lecture		
32	Data Dictionary			
	MODULE III			
33	System Engineering	PPT/Lecture		
34	Comparison between System and Software Engineering	PPT/Lecture		
35	Analysis Concepts	PPT/Lecture		
36	Design Process and concepts	Lecture	Quiz	
37	Modular Design	Lecture		
38	Design Heuristic	PPT/Lecture		
39	Architecture Design	PPT/Lecture		
40	Rules for Software Design	PPT/Lecture		
41	Data Design	PPT/Lecture		
42	User Interface Design	Lecture		
43	Real Time Software Design	PPT/Lecture		
44	System Design	PPT/Lecture		
45	Real Time Executives	PPT/Lecture		
46	Data Acquition System	PPT/Lecture	E-resource	
47	Monitoring and Control System	PPT/Lecture		
48	Examples	PPT/Lecture		
MODULE IV				

49	Taxonomy of software testing	PPT/Lecture		
50	Need of Software Testing	Lecture		
51	Black box testing	PPT/Lecture		
52	White box testing techniques	PPT/Lecture	Video	
53	Basis Path testing, cyclomatic complexity	PPT/Lecture		
54	Condition, Data Flow, Loop testing.	PPT/Lecture		
55	Testing boundary conditions	Lecture		
56	Structural Testing	Lecture	Quiz	
57	Test Coverage Criteria Based on Data Flow Mechanism	PPT/Lecture		
58	Types of Testing	PPT/Lecture		
59	Regression and Unit Testing	PPT/Lecture		
60	Integration and Validation.	PPT/Lecture		
61	System Testing and Debugging	PPT/Lecture		
62	Software Implementation Techniques	PPT/Lecture		
CIA – II MODULE V				
63	Measures and Measurements	Lecture	Demo video	
64	ZIPF's Law	Lecture		
65	Software Cost Estimation	Lecture	Quiz	
66	Function Point Models	Lecture		
67	COCOMO Models	PPT/Lecture		
68	Delphi Method, Earned Value Analysis, Error Tracking	PPT/Lecture		
69	SCM, Program Evolution Dynamics, Software Maintenance,	PPT/Lecture		
70	Project planning and scheduling, Risk Management.	Lecture		
71	Revision			
72	Revision			

INDIVIDUAL ASSIGNMENTS/SEMINAR – Details & Guidelines

Sl.No	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	22/08/2019	Software Configuration Management

GROUP ASSIGNMENTS/ACTIVITES – Details & Guidelines

Sl.No	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	17/07/2019	Verification, Validation and Testing

REFERENCES

- Object Oriented Software Engineering, Timothy C. Lethbridge & Robert Laganière
- Software Engineering: A Practioner's Approach (Sixth Edition, International Edition) McGraw-Hill,2005.
- Software Engineering (seventh edition) Ian Sommerville, Addison-Wesley, 2004.

WEB RESOURCE REFERENCES:

- Ian K. Bray. An Introduction to Requirements Engineering. Pearson Addison Wesley; 1st edition (August 26, 2002).
- IEEE. IEEE Recommended Practice for Software Requirements Specification, Std 830-1998. (Local copy)

COURSEPLAN: U3CRBCA9- RDBMS

PROGRAMME	**BACHELOR OF COMPUTER APPLICATIONS**	**SEMESTER**	**3**
COURSE CODE AND TITLE	**U3CRBCA9: RDBMS**	**CREDIT**	**3**
HOURS/WEEK	**4**	**HOURS/SEM**	**72**
FACULTY NAME	**SANTHOSH KUMAR K P**		

COURSE OBJECTIVES
To learn and practice data modelling using the entity-relationship and developing database designs.
To recall Relational Algebra concepts and use it to translate queries to Relational Algebra statements and vice versa.
To apply the Structured Query Language (SQL) syntax to develop relational model
To apply normalization techniques to normalize the database
To understand the needs of database processing and learn techniques for controlling the consequences of concurrent data access.
To create a simple database system and demonstrate competence with the fundamental tasks involved with modelling, designing, and implementing a DBMS

SESSION	**TOPIC**	**LEARNING RESOURCES**	**VALUE ADDITIONS**	**REMARKS**
	MODULE I			
1	Purpose of Database System	PPT	video	
2	Views of data	PPT/Lecture		
3	Data Models	PPT/Lecture		
4	Data Models	PPT/Lecture	e-resource	
5	Data Models	PPT/Lecture		
6	Database Languages	PPT/Lecture		
7	Database System Architecture – Database users and Administrator	Lecture		
8	Database System Architecture – Database users and Administrator	Lecture		
9	Entity– Relationship model – E-R Diagrams	Lecture		

10	Entity– Relationship model – E-R Diagrams	Lecture		
11	Entity– Relationship model – E-R Diagrams	PPT/Lecture		
12	Introduction to relational databases	PPT/Lecture		
13	Introduction to relational databases	PPT/Lecture		
14	Revision			
	MODULE II			
15	The relational Model – Keys	PPT/Lecture		
16	Relational Algebra	Lecture		
17	Domain Relational Calculus	Lecture		
18	Tuple Relational Calculus	Lecture		
19	SQL fundamentals	Lecture		
20	Oracle data types, Data Constraints, Column level & table Level Constraints, working with Tables.	PPT/Lecture		
21	Defining different constraints on the table, Defining Integrity Constraints in the ALTER TABLE Command	PPT/Lecture		
22	Select Command, Logical Operator, Range Searching	PPT/Lecture		
23	Pattern Matching, Oracle Function, Grouping data from Tables in SQL, Manipulation Data in SQL	PPT/Lecture		
24	Joining Multiple Tables (Equi Joins), Joining a Table to itself (self Joins)	Lecture		
25	Sub queries Union, intersect & Minus Clause, Creating view, Renaming the Column of a view	Lecture		
26	CIA-1			
27	Granting Permissions, - Updating, Selection	Lecture		
28	Destroying view Creating Indexes, Creating and managing User	Lecture		
29	Integrity – Triggers - Security	PPT/Lecture		
30	Advanced SQL features –Embedded SQL– Dynamic SQLMissing Information	PPT/Lecture		
31	Introduction to Distributed Databases and Client/Server Databases	PPT/Lecture		
32	revision			
	MODULE III			
33	Functional Dependencies	PPT/Lecture		
34	Functional Dependencies	PPT/Lecture		

35	Functional Dependencies	PPT/Lecture		
36	Functional Dependencies	Lecture	Quiz	
37	Candidate Keys	Lecture	Q & Ans Session	
38	Candidate Keys	PPT/Lecture		
39	Non-loss Decomposition	PPT/Lecture		
40	Non-loss Decomposition	PPT/Lecture		
41	1NF	PPT/Lecture		
42	2NF	Lecture		
43	3NF	PPT/Lecture		
44	BCNF	PPT/Lecture		
45	Problems on normalization	PPT/Lecture		
46	Problems on normalization	PPT/Lecture		
47	Problems on normalization	PPT/Lecture		
48	Problems on normalization	PPT/Lecture		
49	Problems on normalization	PPT/Lecture		
50	Problems on normalization	PPT/Lecture		
51	Problems on normalization	PPT/Lecture		
52	4NF	PPT/Lecture		
53	5NF	PPT/Lecture		
54	Revision			
55	Revision			
	MODULE IV			
56	Transaction Concepts	Lecture	Debate	
57	Transaction Recovery	PPT/Lecture		
58	ACID Properties	PPT/Lecture		
59	System Recovery – Media Recovery	PPT/Lecture		
60	Two Phase Commit	PPT/Lecture		
61	Two Phase Commit	PPT/Lecture		
62	Two Phase Commit	PPT/Lecture		
CIA - II				
63	Save Points – SQL Facilities for recovery	Lecture	Demo video	
64	Concurrency –Need for Concurrency	Lecture		
65	Locking Protocols – Two Phase Locking	Lecture	Group discussion	
66	Intent Locking – Deadlock	Lecture		
67	Serializability – Recovery Isolation Levels	PPT/Lecture		
68	Serializability – Recovery Isolation Levels	PPT/Lecture		
69	Serializability – Recovery Isolation Levels	PPT/Lecture		
70	SQL Facilities for Concurrency			

71	Revision			
72	Revision			

INDIVIDUAL ASSIGNMENTS/SEMINAR – Details & Guidelines

	Date of completion	**Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)**
1	18/7/2019	SQL questions

GROUP ASSIGNMENTS/ACTIVITES – Details & Guidelines

	Date of completion	**Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)**
1	26/9/2019	Mini project: ER diagram, normalization, development a model

References

- Abraham Silberschatz, Henry F. Korth, S. Sudharshan, “Database System Concepts”,Fifth Edition, Tata McGraw Hill, 2006
- Ramez Elmasri, Shamkant B. Navathe, “Fundamentals of Database Systems”, Fourth Edition, Pearson/Addision Wesley, 2007
- Raghu Ramakrishnan, “Database Management Systems”, Third Edition, McGraw Hill,

COURSE PLAN: 16U3CRBCA10- COMPUTER NETWORKS

PROGRAMME	**BACHELOR OF COMPUTER APPLICATIONS**	**SEMESTER**	**3**
COURSE CODE AND TITLE	**16U3CRBCA10: COMPUTER NETWORKS**	**CREDIT**	**4**
HOURS/WEEK	**4**	**HOURS/SEM**	**72**
FACULTY NAME	**NIJO ANTONY**		

COURSE OBJECTIVES
To identify mechanism deployed in Computer networks and to understand the advantages of computer network and types of and devices used for networking.
To discuss the process involved in the networking and functionalities of each layers and detailed working status.
To discourse different wireless transmission techniques and the technologies and its standards and practical side of its usage.
To differentiate different functionalities each layers of networks and protocols involved in each layers.
To know the usage of trouble shooting commands and its usage and tools for analyzing the network trouble shooting.

SESSION	**TOPIC**	**LEARNING RESOURCES**	**VALUE ADDITIONS**	**REMARKS**
	MODULE I			
1	Basics of Network & Networking	PPT/Lecture	video	
2	Advantages of Networking	PPT/Lecture		
3	Types of Networks	PPT/Lecture		
4	Network Terms- Host, Workstations	PPT/Lecture		
5	Server, Client, Node	PPT/Lecture		
6	Types of Network Architecture- Peer-to-Peer & Client/Serve	PPT/Lecture		
7	Workgroup Vs. Domain. Network Topologies	PPT/Lecture		
8	Types of Topologies	PPT/Lecture		
9	Logical and physical topologies	PPT/Lecture		
10	selecting the Right Topology	PPT/Lecture		
12	Types of Transmission Media	PPT/Lecture	video	
13	Communication Modes, Wiring Standards and Cabling- straight through cable	PPT/Lecture		
14	crossover cable, rollover cable, media connectors	PPT/Lecture		

	(Fiber optic, Coaxial, and TP etc.)			
15	Introduction of OSI model, Seven layers of OSI model			
	MODULE II			
16	Functions of the seven layers,	PPT/Lecture		
17	Introduction of TCP/IP Model	Lecture	video	
18	TCP, UDP, IP, ICMP, ARP/RARP	Lecture		
19	Comparison between OSI model & TCP/IP model	Lecture		
20	Overview of Ethernet Addresses	Lecture		
21	Network Devices- NIC- functions of NIC, installing NIC, Hub, Switch, Bridge	PPT/Lecture		
22	Router, Gateways, And Other Networking Devices, Repeater	PPT/Lecture		
23	CSU/DSU, and modem, Data Link Layer: Ethernet, Ethernet standards, Ethernet Components, Point-to-Point Protocol (PPP),PPP standards	PPT/Lecture		
24	Address Resolution Protocol, Message format, transactions	PPT/Lecture		
25	Wireless Networking: Wireless Technology, Benefits of Wireless Technology	Lecture	video	
26	Types of Wireless Networks: Ad-hoc mode, Infrastructure mode,	Lecture		
	CIA-1			
27	Wireless network Components: Wireless Access Points, Wireless NICs, wireless	Lecture		
28	LAN standards: IEEE 802.11a, IEEE 802.11b, IEEE 802.11g	Lecture		
29	wireless LAN modulation techniques,	PPT/Lecture		
30	wireless security Protocols: WEP,WPA	PPT/Lecture		
31	802.1X, Installing a wireless LAN	PPT/Lecture		
32	Packet Switching	Lecture	video	
	MODULE III			
33	Network Layer: Internet Protocol (IP), IP standards, versions	PPT/Lecture		
34	S functions, IPv4 addressing, IPv4 address Classes,	PPT/Lecture		
35	IPv4 address types, Subnet Mask	PPT/Lecture		
36	Default Gateway, Public & Private IP Address	Lecture		
37	methods of assigning IP address	Lecture	Q & Ans Session	
38	IPv6 address, types, assignment	PPT/Lecture		

39	Monitors Data encapsulation, The IPv4 Datagram Format,	PPT/Lecture	video	
40	The IPv6 Datagram Format	PPT/Lecture		
41	Internet Control Message Protocol (ICMP), ICMPv4	PPT/Lecture		
42	ICMPv6, Internet Group Management Protocol (IGMP),	Lecture		
43	Introduction to Routing and Switching concepts			
44	Transport Layer: Transmission Control Protocol(TCP),	PPT/Lecture		
45	User Datagram Protocol (UDP),	PPT/Lecture	video	
46	Overview of Ports & Sockets,	PPT/Lecture		
47	Application Layer: DHCP, DNS	PPT/Lecture		
48	HTTP/HTTPS, FTP, TFTP, SFTP	PPT/Lecture		
49	Telnet, Email: SMTP, POP3/IMAP, NTP	PPT/Lecture		
50	What Is a WAN?, WAN Switching, WAN Switching techniques Circuit Switching,	PPT/Lecture		
51	Connecting to the Internet : PSTN, ISDN, DSL, CATV, Satellite-Based Services, Last Mile Fiber	PPT/Lecture		
52	Cellular Technologies, Connecting LANs : Leased Lines	PPT/Lecture		
53	Remote Access: Dial-up Remote Access, Virtual Private Networking	PPT/Lecture		
54	SSL VPN, Remote Terminal Emulation	PPT/Lecture		
55	Tunneling and Encryption Protocols,	PPT/Lecture		
56	IPSec, SSL and TLS, Firewall, Other Security Appliances,	PPT/Lecture		
57	Network Operating Systems: Microsoft Operating Systems	PPT/Lecture		
58	Novell NetWare, UNIX and Linux Operating Systems, Macintosh Networking	PPT/Lecture		
59	Trouble Shooting Networks: Command-Line interface Tools,	PPT/Lecture	Hands on training	
60	Network and Internet Troubleshooting, Basic Network Troubleshooting	PPT/Lecture	Hands on training	
61	Troubleshooting Model, implement a solution, test the result,	PPT/Lecture	Hands on training	
62	recognize the potential effects of the solution, document the solution	PPT/Lecture		
CIA - II				

63	Using Network Utilities: ping	PPT/Lecture	Hands on training	
64	traceroute, tracert, ipconfig	PPT/Lecture	Hands on training	
65	arp, nslookup, netstat	PPT/Lecture	Hands on training	
66	nbtstat, Hardware trouble shooting tools	PPT/Lecture	Hands on training	
67	identify the affected area, probable cause	PPT/Lecture	Hands on training	
68	SONET/SDH	PPT/Lecture		
69	Network security: Authentication and Authorization,	PPT/Lecture		
70	Security Threats	PPT/Lecture		
71	system monitoring tools	PPT/Lecture		
72	Revision			

INDIVIDUAL ASSIGNMENTS/SEMINAR – Details & Guidelines

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	17 - 30/9/2018	Recent trends in Computer network and security

GROUP ASSIGNMENTS/ACTIVITES – Details & Guidelines

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	25/7/2018	Different models of networking and data transmission methods

References

- CCNA Cisco Certified Network Associate: Study Guide (With CD) 7th Edition (Paperback), Wiley India, 2011
- CCENT/CCNA ICND1 640-822 Official Cert Guide 3 Edition (Paperback), Pearson, 2013
- Routing Protocols and Concepts CCNA Exploration Companion Guide (With CD) (Paperback), Pearson, 2008
- CCNA Exploration Course Booklet : Routing Protocols and Concepts, Version 4.0 (Paperback), Pearson, 2010

COURSEPLAN: U3CRBCA11 - PROGRAMMING IN JAVA

PROGRAMME	**BCA (MOBILE APPLICATIONS & CLOUD TECHNOLOGY)**	**SEMESTER**	**3**
COURSE CODE AND TITLE	**U3CRBCA11 - PROGRAMMING IN JAVA**	**CREDITS**	**4**
HOURS/WEEK	**4**	**HOURS/SEM**	**72**
FACULTY NAME	**MR. SHAILESH S**		

COURSE OUTCOMES
To understand the basic concepts of Java Programming
To develop understanding about object oriented programming in Java, including defining classes, invoking methods, using libraries.
To learn experience of designing, implementing, testing and debugging graphical user interfaces in Java
To understand Java Swings for designing GUI applications

SESSION	**TOPIC**	**LEARNING RESOURCES**	**VALUE ADDITIONS**	**REMARKS**
MODULE I -INTRODUCTION				
1	History, Overview of Java	Lecture using PPT		
2	Object Oriented Programming	Lecture using PPT		
3	Object Oriented Programming			
4	A simple Java Programme	Lecture using PPT		
5	Two control statements - if statement	Lecture using PPT		
6	for loop	Lecture using PPT	Video	
7	Using Blocks of codes, Lexical issues - White space, identifiers, Literals, comments, separators, Java Key words	Lecture using PPT		
8	Using Blocks of codes, Lexical issues - White space, identifiers, Literals, comments, separators, Java Key words	Lecture using PPT		
9	Data types: Integers, Floating point, characters, Boolean	Lecture using PPT		

10	A closer look at Literals, Variables, Type conversion and casting	Lecture using PPT		
11	Automatic type promotion in Expressions Arrays	Lecture using PPT		
12	Arithmetic operators, The Bit wise operator, Jump statements.	Lecture using PPT		
13	Relational Operators, Boolean Logical operators, Assignment Operator, Operator Precedence	Lecture using PPT		
14	Control Statements: Selection Statements - if, Switch: Iteration Statements	Lecture using PPT		
15	While, Do-while, for Nested loops	Lecture using PPT		
MODULE II - CLASSES				
16	Class Fundamentals	Lecture using PPT	Video	
17	Declaring objects	Lecture using PPT		
18	Assigning object reference variables	Lecture using PPT	Video	
19	Methods, constructors	Lecture using PPT		
20	CIA 1			
21	CIA 2			
22	CIA 3			
23	“this” keyword, finalize ( ) method	Lecture using PPT		
24	A stack class, Overloading methods.	Lecture using PPT	e-resource	
25	Using objects as parameters	Lecture using PPT		
26	Argument passing, Returning objects	Lecture using PPT		
27	Recursion, Access control	Lecture using PPT	e-resource	
28	Introducing final, understanding static	Lecture using PPT		
29	Introducing Nested and Inner classes	Lecture using PPT		
30	Using command line arguments.	Lecture using PPT		
31	Inheritance: Inheritance basics	Lecture using PPT	e-resource	
32	Inheritance: Inheritance basics	Lecture using PPT	e-resource	

33	Using super, method overriding,	Lecture using PPT		
34	Dynamic method Dispatch	Lecture using PPT		
35	Using abstract classes	Lecture using PPT		
36	Using final with Inheritance	Lecture using PPT		
MODULE III - PACKAGES				
37	Definition: Packages	Lecture using PPT		
38	Access protection importing packages	Java Servlets: Introduction	Video	
39	Access protection importing packages			
40	Interfaces: Definition implementing interfaces	Lecture using PPT	Online Tutorial	
41	Interfaces: Definition implementing interfaces	Lecture using PPT	Online Tutorial	
42	Exception Handling: Fundamentals	Lecture using PPT		
43	Exception types, Using try and catch	Lecture using PPT		
44	Multiple catch clauses, Nested try Statements	Lecture using PPT		
45	throw, throws, finally	Lecture using PPT	Online Tutorial	
46	Java's Built - in exception, using Exceptions.	Lecture using PPT	Online Tutorial	
MODULE IV – MULTITHREADED PROGRAMMING				
47	The Java thread model, The main thread	Lecture using PPT	Online Tutorial	
48	Creating a thread, Creating multiple threads	Lecture using PPT	Online Tutorial	
49	Using isalive() and Join()	Lecture using PPT	Online Tutorial	
50	Thread - Priorities, Synchronization	Lecture using PPT		
51	Inter thread communication,	Lecture using PPT		

	suspending, resuming and stopping threads, using multithreading			
52	1/0 basics, Reading control input	Lecture using PPT		
53	Writing control output, Reading and Writing files	Lecture using PPT		
54	CIA 2			
55	CIA 2			
56	CIA 2			
57	CIA 2			
58	CIA 2			
59	Applet Fundamentals, the AWT package	Lecture using PPT		
60	AWT Event handling concepts	Lecture using PPT		
61	The transient and volatile modifiers	Lecture using PPT	e-resource	
62	Using instance of assert.	Lecture using PPT		
MODULE V: JAVA DATABASE CONNECTIVITY				
63	Database connectivity: JDBC architecture,	Lecture using PPT		
64	JDBC Drivers, the JDBC API: loading a driver	Lecture using PPT		
65	Connecting to a database, Creating and executing JDBC statements	Lecture using PPT		
66	Connecting to a database, Creating and executing JDBC statements	Lecture using PPT		
67	Handling SQL exceptions	Lecture using PPT	e-resource	
68	Handling SQL exceptions	Lecture using PPT	e-resource	
69	Accessing result sets: Types of result sets, Methods of result set interface			
70	An example JDBC application to query a database.			
71	Revision			
72	Revision			

INDIVIDUAL ASSIGNMENTS/SEMINAR – DETAILS & GUIDELINES

Sl. No.	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc.)
1	19-07-2018	Genesis of Java and its characteristics in detail.
2	19-07-2018	Program structure: identifiers, operators, variables, literals, byte code, JVM, data types and arrays.
3	19-07-2018	Control Statements, selection statements, iterative statements and jump statements with examples. Loops: while loop, do while loop and for loop with examples.
4	19-07-2018	Blocks of codes, Lexical issues - White space, identifiers, Literals, comments, separators, Java Key words. Data types: Integers, Floating point, characters, Boolean, A closer look at Literals, Variables, Type conversion and casting, Automatic type promotion in Expressions Arrays.
5	19-07-2018	Class declaration, object references and object instantiation, method declaration, method calling, command-line arguments and constructors.
6	19-07-2018	Method overloading, constructor overloading, method overriding, “this” keyword, finalize ( ) method, stack class.
7	19-07-2018	Passing objects as function argument, returning objects and recursion.
8	19-07-2018	Inheritance and its different types in detail.
9	19-07-2018	Access control, introducing final, understanding static class, abstract class, introducing nested and inner classes, using command line arguments.
10	19-07-2018	Using super, dynamic method dispatch, final variable, final method, final class, static class and abstract class
11	19-07-2018	String class and its main functions.
12	19-07-2018	Packages: creating packages, using packages, user defined packages.
13	19-07-2018	Interfaces: creating interface and implements interface.
14	19-07-2018	Exception Handling: try, catch, finally, throw and throws with examples.
15	19-07-2018	The Java thread model, the main thread, creating a thread, creating multiple thread, creating a thread, creating multiple threads, using isalive() and join().
16	19-07-2018	Thread - Priorities, Synchronization.
17	19-07-2018	Inter thread communication, suspending, resuming and stopping threads, using multithreading.

18	19-07-2018	I/O basics, Reading control input, writing control output, Reading and Writing files.
19	19-07-2018	Applet Fundamentals and Applet life cycle.
20	19-07-2018	The AWT package and AWT event handling concepts.
21	19-07-2018	The transient and volatile modifiers, using instance of using assert.
22	19-07-2018	Event classes, sources of events and event listeners with examples.
23	19-07-2018	AWT controls: Label, Button, Text Field, Radio Button and Check Box with examples.
24	19-07-2018	AWT controls: Table, Frame, Combo Box and List with examples.
25	19-07-2018	Database connectivity: JDBC architecture, JDBC Drivers, the JDBC API: loading a driver, connecting to a database, Creating and executing JDBC statements.
26	19-07-2018	Handling SQL exceptions, accessing result sets: Types of result sets, Methods of result set interface. An example JDBC application to query a database.

GROUP ASSIGNMENTS/ACTIVITES – DETAILS & GUIDELINES

	Date of completion	**Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc.)**
1	29-08-2018	Mini project using JDBC

REFERENCES:

- Herbert. The Complete Reference Java –2, 5th Edition, Schildt Pub. Tmh. [2] Rogers
- Cedenhead and Leura Lemay, Sams Teach Yourself Java – 2, 3rd Edition, Pearson Education.