SACRED HEART COLLEGE(AUTONOMOUS), THEVARA
DEPARTMENT OF COMPUTER SCIENCE
COURSE PLAN
ACADEMIC YEAR 2018-2019

PROGRAMME	BACHELOR OF COMPUTER APPLICATIONS [MOBILE APPLICATIONS AND CLOUD TECHNOLOGY]	**SEMESTER**	1
COURSE CODE AND TITLE	U1CPCMT1 Foundation of Mathematics	**CREDIT**	4
HOURS/WEEK	4		72
FACULTY NAME	Neethu thomas		

PROGRAMME SPECIFIC OUTCOMES(PSOs)	
PSO1	Apply the theoretical foundations of computer science in modelling and developing solutions to the complex and real world problems.
PSO2	Comprehend, explore and build up computer programs, applications in the allied areas like Algorithms, Multimedia, Web Design and android applications for efficient design of computer-based systems that meet the needs of industry and society.
PSO3	Develop skills in android and cloud technology development so as to enable the graduates to take up employment/self-employment in global technical market.
PSO4	Apply knowledge of layered network models, protocols, technologies, topologies and security policies for building network and internet based applications.

COURSE OBJECTIVES	
CO1	Understand the concepts and prove statements about sets and functions
CO2	Understand relations, its properties, represention, equivalence relations and partial ordering
CO3	Understand and apply concepts of Prepositional logic, Predicates and Quantifiers
CO4	Familiarize mathematical Symbols and standard methods of proofs.
CO5	Understand the basic concepts of Number theory

SL NO	**SESSION**	**TOPIC**	**LEARNING RESOURCES**
		MODULE I	
1	1	Set Theory Introduction	Lecture
2	1	Basic Operations on Sets	Lecture
3	2	Set Identities	Lecture
4	1	Computer Representation of sets	Lecture
5	1	Functions	Lecture
6	1	Algebraic operations on real Functions	Lecture
7	1	Composition of Functions	Lecture
8	1	Bijective Functions	Lecture
9	1	Inverse Functions	Lecture
10	2	Graphs of functions	Lecture
11	2	Increasing and Decreasing functions	Lecture
12	1	Sequences	Lecture
13	1	Summations	Lecture
14	1	Cardinality	Lecture
		MODULE II	

15	1	Relations Introduction	Lecture
16	3	Types of Relations on a Set	Lecture
17	1	Combinations of Relations	Lecture
18	1	Representation of relations on Finite Sets	Lecture
19	1	Representating relations using Digraphs	Lecture
20	1	n-ary relations and their applications	Lecture
21	1	operations on n-ary relations	Lecture
22	1	Equivalence Relations	Lecture
23	1	Partitions	Lecture
24	2	Partial Oderings	Lecture
25	2	Hasse Diagrams	Lecture
26	1	Covering Relation	Lecture
27	1	Maximal and Minimal elements	Lecture
28	1	Lattices	Lecture
29	1	Toplogical Sorting	Lecture
TEST I			
MODULE III			
30	1	Mathematical Logic Introduction	Lecture
31	1	Propositions -simple and compound	Lecture
32	2	Logical operators	Lecture
33	1	Conditional, Biconditional Statements	Lecture
34	1	Precedence of Logical Operators	Lecture
35	1	Logic and Bit operations	Lecture
36	1	Tautologies and contradictions	Lecture
37	2	Logical Equivalences - Laws of logic	Lecture
38	1	Predicates, Quantifiers	Lecture
39	3	Universal Quantifiers, Existential Quantifiers,Binding Variables	Lecture
40	1	Logical Equivalence involving quantifiers	Lecture
41	1	Negation of quantified expressions	Lecture
42	1	Nested Quantifiers	Lecture
43	1	Arguments	Lecture
44	1	Rules of Inference for propositions	Lecture

45	1	Rules of Inference for quantified statements	Lecture
46	2	Methods of proving theorems	Lecture
MODULE IV			
47	1	Theory of Numbers - Divisibility	Lecture
48	1	Prime and Composite Numbers	Lecture
49	1	GCD, Theorems on division	Lecture
50	1	Divisors of a given number	Lecture
51	1	Euler's Function	Lecture
52	1	Congruences -Theorems	Lecture
53	1	Fermat's theorem	Lecture
54	1	Wilson's theorem	Lecture
55	1	Lagrange's theorem	Lecture
TEST II			
ASSIGNMENTS AND SEMINARS			
	Module	**Topic**	**Nature of Assignment**
1	**1**	Problems on set identities, bijective functions, inverse functions	Written
2	**2**	Problems on Equivalence relations, partial orderings, Hasse diagram, Lattice	Written
3	**3**	Problems on propositions, predicates, quantifiers, rule of inference, methods of proving theorems	Written
4	**4**	Problems on congruences, fermat theorem, wilson theorem, Lagrange's theorem	Written
TEXT BOOKS & REFERENCES			
1	K.H. Rosen: Discrete Mathematics and its Applications (Sixth edition), Tata McGraw Hill Publishing Comp		
2	S. Bernard and J.M Child: Higher Algebra, AITBS Publishers, India,2009		

ACADEMIC SESSION PLAN

Name of the Faculty: Mrs. Neethu Thomas

Course: COMPUTER FUNDAMENTALS AND ORGANISATION

Semester: BCA 1ST yr I sem

Period: From:June 2018 To: NOV 2018

Module	Module Name	Chp	Section	Learning Objectives	Learning Outcomes	Session No.	Hours	Topic	Mode of Delivery	Methodology	Guest Faculty Assistance	Pre-class readings	Post-class tasks	Ref Books	Web Resources	Activities	Topic Coverage (Actual) including activities	Remarks
MODULE 1	GENERAL FEATURES OF A COMPUTER	1.1	A & B	Explain the features of computers	Describe the characteristics of computers	1	1	General features of a computer	using power point slide and black board			Introduction to Computers	Revision	Sinha. Computer Fundamentals BPB Pub.	http://ecomputernotes.com/fundamental/introduction-to-computer/what-are-characteristic-of-a-computer			
MODULE 1	GENERAL FEATURES OF A COMPUTER	1.1	A & B	Outline various types of computers	Differentiate among various types of computers	2	1	Generation of computers Part 1	using power point slide and black board				Revision					
MODULE 1	GENERAL FEATURES OF A COMPUTER	1.1	A & B	Describe the working of computer architecture	Demonstrate the working of each component in computer architecture	3	1	Generation of computers Part 2	using power point slide and black board			Classification of computers	Assignment given based on the topic taught on that day.					
MODULE 1	GENERAL FEATURES OF A COMPUTER	1.2	A & B	Describe the functions of various devices of computer	Discuss the working of various devices of computer	4	1	Classification of computers -Personal computer, workstation,	using power point slide and black board						http://www.tutorialspoint.com/computer_fundamentals/computer_generations.htm			
MODULE 1	GENERAL FEATURES OF A COMPUTER	1.2	A & B		Explain five basic operations of computer system	5	1	mainframe computer and super computers.	using power point slide and black board			Computer Applications	Revision			class Quiz		
MODULE 1	GENERAL FEATURES OF A COMPUTER	1.2	A & B	Describe the evolution of computers	Discuss the improvement of technology in different generation of computer	6	1	Computer applications – data processing	using power point slide and black board				Assignment given based on the topic taught on that day.					
MODULE 1	GENERAL FEATURES OF A COMPUTER	1.2	A & B	Compare among the different generations of computer	Describe how computers are helpful in various fields.	7	1	Classification of computers -information processing, commercial, office automation	using power point slide and black board				Assignment given based on the topic taught on that day.		https://drive.google.com/folderview?id=0BxuFG9QKNyNOczhnWGZKZzhNNW8&usp=sharing			
MODULE 1	GENERAL FEATURES OF A COMPUTER	1.2	A & B	Explain the importance of computers in various fields	Discuss the limitations of computer	8	1	Classification of computers - industry and engineering, healthcare	using power point slide and black board				Assignment given based on the topic taught on that day.					
MODULE 1	GENERAL FEATURES OF A COMPUTER	1.2	A & B		Identify the impact of computer on business and society	9	1	Classification of computers -education, graphics and multimedia.	using power point slide and black board			Comparision of different generations	Assignment given based on the topic taught on that day.					
MODULE 1	GENERAL FEATURES OF A COMPUTER	1.2	A & B			10	1	Comparision of different generations of computers	using power point slide and black board				Assignment given based on the topic taught on that day.			Activities given in TOC		
MODULE 2	COMPUTER ORGANISATION	2.1	A & B	Describe components in computer organization	List the basic components of computer organization	1	1	Computer organization	using power point slide and black board			Computer Organisation	Revision	Sinha. Computer Fundamentals BPB Pub.				
MODULE 2	COMPUTER ORGANISATION	2.1	A & B	Elaborate the working of Central Processing Unit	Describe the features of each componentof CPU	2	1	Central processing unit	using power point slide and black board			Computer Memory	Assignment given based on the topic taught on that day.		http://uotechnology.edu.iq/dep-production/textbook_computer/Fundamentals_of_Computers.pdf			
MODULE 2	COMPUTER ORGANISATION	2.1	A & B	Explain memory unit	Interpret the structure of Memory unit	3	1	Computer memory – Primary memory	using power point slide and black board				Assignment given based on the topic taught on that day.					
MODULE 2	COMPUTER ORGANISATION	2.1	A & B	Describe the types of memory*	Elaborate on various types of memory*	4	1	Computer memory – Secondary memory	using power point slide and black board			Secondary storage devices	Assignment given based on the topic taught on that day.		http://www.tutorialspoint.com/computer_fundamentals/computer_memory_units.htm			
MODULE 2	COMPUTER ORGANISATION	2.2	A & B	Justify the requirement of cache memory in computer	List out the commonly found registers in the CPU and explain their functions	5	1	Secondary storage devices – Magnetic and optical media.Part 1	using power point slide and black board				Assignment given based on the topic taught on that day.					
MODULE 2	COMPUTER ORGANISATION	2.2	A & B	Explain the role of secondary memory in storage	Compare volatile and non-volatile memory	6	1	Secondary storage devices – Magnetic and optical media.Part 2	using power point slide and black board				Assignment given based on the topic taught on that day.					
MODULE 2	COMPUTER ORGANISATION	2.2	A & B	Explain the working of disk storage	Define disk storage	7	1	Secondary storage devices – Magnetic and optical media.Part 3	using power point slide and black board				Assignment given based on the topic taught on that day.					
MODULE 2	COMPUTER ORGANISATION	2.2	A & B	Elaborate on various types of secondary	Identify the current secondary storage to store	8	1	Secondary storage devices – Magnetic and optical media.Part 4	using power point slide and black board				Assignment given based on the topic taught on that day.					
MODULE 2	COMPUTER ORGANISATION	2.2	A & B	Explain various types of Input-Output devices used in computer*	Describe the functioning of various input-output devices	9	1	Secondary storage devices – Magnetic and optical media.Part 5	using power point slide and black board			Input Devices	Assignment given based on the topic taught on that day.					
MODULE 2	COMPUTER ORGANISATION	2.2	A & B	Elaborate the importance of OMR, MICR and OCR	Familiarize on OMR, MICR and OCR	10	1	Input Devices Part 1	using power point slide and black board				Revision		https://www.techopedia.com/definition/13265/secondary-storage-device			
MODULE 2	COMPUTER ORGANISATION	2.2	A & B		Differentiate magnetic disk and magnetic tape	11	1	Input Devices Part 2	using power point slide and black board			Output Devices	Revision					
MODULE 2	COMPUTER ORGANISATION	2.2	A & B			12	1	Output Devices Part 1	using power point slide and black board				Revision					
MODULE 2	COMPUTER ORGANISATION	2.2	A & B			13	1	Output Devices Part 2	using power point slide and black board				Revision					
MODULE 2	COMPUTER ORGANISATION	2.2	A & B			14	1	Output Devices Part 3	using power point slide and black board				Revision			Activities given in TOC		
MODULE 3	COMPUTER HARDWARE AND SOFTWARE	3.1	A & B	Elaborate the features of hardware and software resources	List the various hardware and software resources	1	1	Computer hardware and software. Machine language and high level language. Part 1	using power point slide and black board			Computer Hardware and software	Revision	Sinha. Computer Fundamentals BPB Pub.	http://cs.sru.edu/~mullins/cpsc100book/module02_introduction/module02-03_introduction.html			
MODULE 3	COMPUTER HARDWARE AND SOFTWARE	3.1	A & B	Explain the various types of computer languagesand their translators	Distinguish between machine level, assembly level and high level languages	2	1	Computer hardware and software. Machine language and high level language. Part 2	using power point slide and black board			Application Software	Assignment given based on the topic taught on that day.					
MODULE 3	COMPUTER HARDWARE AND SOFTWARE	3.1	A & B	Elaborate on security issues in computers	Differentiate system software and application software	3	1	Application software, computer program	using power point slide and black board			Operating System	Assignment given based on the topic taught on that day.					
MODULE 3	COMPUTER HARDWARE AND SOFTWARE	3.1	A & B	Describe operating systems used in	Identify what are the security threats in	4	1	Operating system	using power point slide and black board			Computer virus, antivirus and security	Revision		http://www.diffen.com/difference/Hardware_vs_Software			
MODULE 3	COMPUTER HARDWARE AND SOFTWARE	3.1	A & B	Identify the need of translator program in computer	Differentiate between Disk operating system and Windows operating system	5	1	Computer virus, antivirus and computer security. Elements of MS DOS and Windows OS.	using power point slide and black board			Computer Arithmetic	Revision					
MODULE 3	COMPUTER HARDWARE AND SOFTWARE	3.2	A & B		Give some advantages of Windows over DOS system	6	1	Computer arithmetic Part 1	using power point slide and black board				Assignment given based on the topic taught on that day.		http://www.tutorialspoint.com/computer_fundamentals/computer_number_system.htm			
MODULE 3	COMPUTER HARDWARE AND SOFTWARE	3.2	A & B	Differentiate between non-positional and positional number system	Elaborate the different types of number system	7	1	Computer arithmetic Part 2	using power point slide and black board				Assignment given based on the topic taught on that day.					
MODULE 3	COMPUTER HARDWARE AND SOFTWARE	3.2	A & B	Demonstrate conversion of the number system from one form to another*	Perform the conversion of a given number system to another	8	1	Computer arithmetic Part 3	using power point slide and black board			Binary, Octal and Hexadecimal number systems.	Assignment given based on the topic taught on that day.					
MODULE 3	COMPUTER HARDWARE AND SOFTWARE	3.2	A & B	Illustrate algorithms and flowcharts	Develop an algorithm/flowchart for a specific problem	9	1	Binary, octal and hexadecimal number systems.Part 1	using power point slide and black board				Assignment given based on the topic taught on that day.					
MODULE 3	COMPUTER HARDWARE AND SOFTWARE	3.2	A & B	Outline the elements and applications of a database	List the elements and applications of a database	10	1	Binary, octal and hexadecimal number systems.Part 2	using power point slide and black board				Assignment given based on the topic taught on that day.					
MODULE 3	COMPUTER HARDWARE AND SOFTWARE	3.2	A & B	Elaborate Logic gates and Boolean expressions*	Explain different types of flowcharts and its notations	11	1	Binary, octal and hexadecimal number systems.Part3	using power point slide and black board			Basic Gates	Assignment given based on the topic taught on that day.					
MODULE 3	COMPUTER HARDWARE AND SOFTWARE	3.2	A & B		Design a flow diagram using logic gates	12	1	Basic Gates(Demorgans theorems, duality theorem, NOR,NAND,XOR,XNOR gates), Boolean expressions and logic diagrams, Types of Boolean expressions Part 1	using power point slide and black board				Assignment given based on the topic taught on that day.		http://www.byte-notes.com/number-system-computer			
MODULE 3	COMPUTER HARDWARE AND SOFTWARE	3.2	A & B		Draw up a flowchart to accept any two numbers and display their product	13	1	Basic Gates(Demorgans theorems, duality theorem, NOR,NAND,XOR,XNOR gates), Boolean expressions and logic diagrams, Types of Boolean Part 2	using power point slide and black board				Assignment given based on the topic taught on that day.					
MODULE 3	COMPUTER HARDWARE AND SOFTWARE	3.2	A & B		Draw the circuit diagram that implements the expression using gates having no more than three inputs	14	1	Basic Gates(Demorgans theorems, duality theorem, NOR,NAND,XOR,XNOR gates), Boolean expressions and logic diagrams, Types of Boolean expressions Part 3	using power point slide and black board			Algorithms and Flowcharts	Assignment given based on the topic taught on that day.					
MODULE 3	COMPUTER HARDWARE AND SOFTWARE	3.2	A & B		X=ABC(A+B)	15	1	Algorithm and flowcharts	using power point slide and black board				Revision			Activities given in TOC		
MODULE 4	MS OFFICE	4.1	A & B	Explain benefits of using MS office	Identify the benefits of MS office	1	1	read sheet. An overview of MSWORD, M	using power point slide and black board			Word and Spreadsheet	Assignment given based on the topic taught on that day.	Sinha. Computer Fundamentals BPB Pub.	http://www.microsoftstore.com/store/msusa/en_US/cat/All-Office/categoryID.69403900			
MODULE 4	MS OFFICE	4.1	A & B	Elaborate the features of MS Office	List the featuresof MS office	2	1	Introductiion of MS WORD Part 1	using power point slide and black board			MS Word	Assignment given based on the topic taught on that day.					
MODULE 4	MS OFFICE	4.1	A & B	Illustrate help and security in MS office	Demonstrate help and security in MS office	3	1	Introductiion of MSWORD Part 2	using power point slide and black board				Assignment given based on the topic taught on that day.					
MODULE 4	MS OFFICE	4.1	A & B	Explain the features ofMS word	Use MS word for various documentation tasks	4	1	Introductiion of MSExcel Part 1	using power point slide and black board			MS Excel	Assignment given based on the topic taught on that day.		http://www.excel-easy.com/			
MODULE 4	MS OFFICE	4.1	A & B	Explain merge printing in MS word	Explain the use of AutoFormat feature of Word	5	1	Introductiion of MSExcel Part 2	using power point slide and black board				Assignment given based on the topic taught on that day.					
MODULE 4	MS OFFICE	4.2	A & B	Explain the function of worksheet in MS Excel	Distinguish between workbook and work sheet	6	1	Introductiion of MSExcel Part 3	using power point slide and black board			MS Power Point	Assignment given based on the topic taught on that day.					
MODULE 4	MS OFFICE	4.2	A & B	Illustrate to work with formulae	Perform calculations in an Excel sheet	7	1	Introductiion of MSPowerPoint Part 1	using power point slide and black board				Assignment given based on the topic taught on that day.		http://blog.hubspot.com/marketing/easy-powerpoint-design-tricks-ht			
MODULE 4	MS OFFICE	4.2	A & B	Demonstrate how to create power point presentation	Design a power point presentationwith transitions and animations	8	1	Introductiion of MSPowerPoint Part 2	using power point slide and black board				Assignment given based on the topic taught on that day.			Activities given in TOC		
MODULE 4	MS OFFICE	4.2	A & B	Explain the basic operations performed in PowerPoint	Using a template, create a PPT and do the necessary formatting													
MODULE 4	MS OFFICE	4.2	A & B		Explain the use of Excel's Function Wizard													
MODULE 4	MS OFFICE	4.2	A & B		List the conversion of text to shapes in PowerPoint													
MODULE 5	INTRODUCTION TO NETWORKING	5.1	A & B	Explain the importance of computer networks	Identify the uses of computer networks in real world	1	1	Network of computers.	using power point slide and black board			Network of Computers	Revision	Sinha. Computer Fundamentals BPB Pub.	http://www.informit.com/articles/article.aspx?p=1353367			
MODULE 5	INTRODUCTION TO NETWORKING	5.1	A & B	Elaborate on transmission technology	Explain how transmission technology is useful in computer networks	2	1	Types of networks :LAN	using power point slide and black board			LAN, MAN	Revision					
MODULE 5	INTRODUCTION TO NETWORKING	5.1	A & B	Differentiate among the types of networks	Identify the differences among the various types of networks available	3	1	Types of networks :MAN	using power point slide and black board			WAN	Revision					
MODULE 5	INTRODUCTION TO NETWORKING	5.1	A & B	List some applications of computer networks	Compare intranet, Internet and extranet.	4	1	Types of networks :WAN	using power point slide and black board			Intranet and Internet	Revision		http://heather.cs.ucdavis.edu/~matloff/Networks/Intro/NetIntro.pdf			
MODULE 5	INTRODUCTION TO NETWORKING	5.2	A & B	Elaborate the different types of network with example		5	1	Intranet and Internet	using power point slide and black board			Internet Applications	Revision					
MODULE 5	INTRODUCTION TO NETWORKING	5.2	A & B	Describe the basic terminologies of internet	Describe how domain name systems work	6	1	Internet applications	using power point slide and black board			WWW	Assignment given based on the topic taught on that day.					
MODULE 5	INTRODUCTION TO NETWORKING	5.2	A & B	Illustrate Domain name system and world wide web	Discuss how browsers and search engines help in real world	7	1	World wide web	using power point slide and black board			Email, browsing, searching	Assignment given based on the topic taught on that day.					
MODULE 5	INTRODUCTION TO NETWORKING	5.2	A & B	Elaborate steps to create an account in Gmail and its features	List the multimedia applications of internet	8	1	E-mail, browsing and searching,	using power point slide and black board			Search Engines	Assignment given based on the topic taught on that day.					
MODULE 5	INTRODUCTION TO NETWORKING	5.2	A & B	Differentiate between browsers and search engines	Explain the purpose of URL in WWW	9	1	search engines	using power point slide and black board			Multimedia Applications	Assignment given based on the topic taught on that day.					
MODULE 5	INTRODUCTION TO NETWORKING	5.2	A & B	Explain multimedia applications	Create your account in yahoo mail	10	1	multimedia applications	using power point slide and black board				Assignment given based on the topic taught on that day.			Activities given in TOC		

SACRED HEART COLLEGE(AUTONOMOUS), THEVARA

DEPARTMENT OF COMPUTER SCIENCE

COURSE PLAN

ACADEMIC YEAR 2019-2020

PROGRAMME	**BCA (SPECIALISATION IN MOBILE APPLICATIONS AND CLOUD TECHNOLOGY)**	**SEMESTER**	1
COURSE CODE AND TITLE	**U1CRBCA3, Introduction to Linux**	**CREDIT**	**3**
HOURS/SEM	**4**		
FACULTY NAME	**Mrs.Christy Jacqueline**		

PROGRAMME SPECIFIC OUTCOMES(PSOs)

1	
2	
3	
4	
5	

COURSE OUTCOMES (COs)

1	To understand the basic commands, history and features of Linux/ Unix
2	Exploring different Linux Flavors
3	To understand the Unix File System
4	
5	
6	
7	
8	

MODULE I								
Sl.No	**Session**	**Topic**	**Method of Teaching**	**Value Additions**	**CO**	**PO/PSO**	**Cognitive Leve(CL)**	**Knowledge Category (KC)**
1	1		PPT		CO1			
2	2		PPT					
3	3		PPT					
4	4		PPT					
5	5		PPT					
6	6		PPT					
7	7		PPT					
8			PPT					
9			PPT					
MODULE II								
10			PPT					
11			PPT					
12			PPT					
13			PPT					
14			PPT					
15			PPT					
MODULE III								
16			PPT					
17			PPT					
18			PPT					
19			PPT					
20			PPT					
21			PPT					
22			PPT					
23			PPT					
MODULE IV								
24			PPT					
25			PPT					
26			PPT					
27			PPT					
MODULE V								
			PPT					
			PPT					
			PPT					
			PPT					

TEXTBOOKS AND REFERENCES	
1	
2	
3	

SACRED HEART COLLEGE(AUTONOMOUS), THEVARA

DEPARTMENT OF COMPUTER SCIENCE

COURSE PLAN

ACADEMIC YEAR 2018-2019

PROGRAMME	BCA[SPECIALIZATION IN MOBILE APPLICATIONS AND CLOUD TECHNOLOGY]	**SEMESTER**	1
COURSE CODE AND TITLE	U1CRBCA2 : Programming in 'C'	**CREDIT**	3
HOURS/WEEK	4	**HOURS/SEM**	72
FACULTY NAME	Shailesh S		

COURSE OBJECTIVES:

CO 1	Identify real life problems and convert it to computaional problems
CO 2	Solve problems and Produce algorithms, pseudocodes and flowcharts for it.
CO 3	Discuss and memorize different C programming constructs
CO 4	Apply programming concepts to develop programs for problems
CO 5	Analyze and Compare approches to model efficient and standard programs
CO 6	Evaluvate, compile, run and debug programs

CUM. HOURS	DATE	TOPIC	LEARNING RESOURCES	NO. OF HOURS	VALUE ADDITIONS	COURSE OUTCOME
		MODULE I				
3		Introduction to computer based problem solving	ppt/board	3		CO 1
4		Program design and implementation issues	ppt/board	1		CO 1
8		Flowcharts & Algorithms,	ppt/board	4	improved logical thinking	CO 2
9		Top down design & stepwise refinement,	ppt/board	1	improved logical thinking	CO1, CO2
10		Programming environment	ppt/board	1		CO6
11		Machine language, assembly language	ppt/board	1		CO6
12		high level languages, Assemblers,	ppt/board	1		CO6
13		Compilers, Interpreters	ppt/board	1		CO6
14		Hands on Session	Lab	1	critical thinking	CO2
15		Hands on Session	Lab	1	critical thinking	CO2
16		Hands on Session	Lab	1	critical thinking	CO2
		MODULE II				
17		Overview of C, Data Types, Constants & Variables	ppt/board	1		CO3
18		Operators & Expressions	ppt/board	1		CO3
20		Branching and Looping	ppt/board	2		CO3
23		Arrays- single dimensional	ppt/board	3		CO3
26		Multidimensional arrays and matrix operations	ppt/board	3		CO3
27		Functions-fundamentals – general form, function arguments, return value,	ppt/board	1		CO3
28		Basic I/O-formatted and Unformatted I/O.	ppt/board	1		CO3
29		Tutorial Session	Lab	1	structured coding	CO1, CO4,CO6
30		Tutorial Session	Lab	1	structured coding	CO1, CO4,CO6
31		Tutorial Session	Lab	1	structured coding	CO1, CO4,CO6

CUM. HOURS	DATE	TOPIC	LEARNING RESOURCES	NO. OF HOURS	VALUE ADDITIONS	COURSE OUTCOME
		TEST I				
		MODULE III				
32		Scope rules- Local & global variables	ppt/board	1		CO2, CO5
33		scope rules of functions, Functions-parameter passing	ppt/board	1		CO3, CO5
34		call by value and call by reference	ppt/board	1		CO3, CO5
35		calling functions with arrays, argc and argv	ppt/board	1		CO3, CO5
37		recursion- basic concepts, ex-towers of Hanoi	ppt/board	2		CO3, CO5
38		Tutorial Session	Lab	1	program designing	CO1, CO4, CO5,CO6
39		Tutorial Session	Lab	1	program designing	CO1, CO4, CO5, CO6
40		Tutorial Session	Lab	1	program designing	CO1, CO4, CO5, CO6
		MODULE IV				
41		Pointers- The & and * operator, pointer expression, assignments, arithmetic, comparison,	ppt/board	1		CO3, CO5
43		malloc vs calloc, arrays of pointers, pointers to pointers,	ppt/board	2		CO3, CO5
45		initializing pointers, pointers to functions, function retuning pointers,	ppt/board	2		CO3, CO5
47		Structures- Basics, declaring, referencing structure elements,	ppt/board	2		CO3, CO5
49		array of structures, passing structures to functions,	ppt/board	2		CO3, CO5
53		structure pointers, arrays and structures within structures,	ppt/board	4		CO3, CO5
54		Unions – Declaration, uses, enumerated data-types, typedef	ppt/board	1		CO3, CO5
55		Tutorial Session	Lab	1	hands on skills	CO1, CO4, CO5, CO6
56		Tutorial Session	Lab	1	hands on skills	CO1, CO4, CO5, CO6
57		Tutorial Session	Lab	1	hands on skills	CO1, CO4, CO5, CO6
		TEST II				
		MODULE V				
59		File Handling – The file pointer, file accessing functions, fopen, fclose, puc, getc, fprintf,	ppt/board	2		CO3
61		C Preprocessor- #define, #include, #undef, Conditional compilation directives	ppt/board	2		CO6
63		C standard library and header files: Header files, string functions,	ppt/board	2		CO6,CO3
64		mathematical functions, Date and Time functions	ppt/board	1		CO6,CO3
65		Tutorial Session	Lab	1	modeling projects	CO1, CO4, CO5, CO6
66		Tutorial Session	Lab	1	modeling projects	CO1, CO4, CO5, CO6
67		Tutorial Session	Lab	1	modeling projects	CO1, CO4, CO5, CO6
72		Revision	ppt/board	5		CO1, CO2, CO3, CO4
		TEXT BOOKS & REFERNCES				
1	Let us C by Yashwant Kanetka, 6th Edition, PBP Publication					
2	The C programming Language by Richie and Kenninghan, 2004, BPB Publication					
3	Programming in ANSI C by Balaguruswamy, 3rd Edition, 2005, Tata McGraw Hill					

CUM. HOURS	DATE	TOPIC	LEARNING RESOURCES	NO. OF HOURS	VALUE ADDITIONS	COURSE OUTCOME

SACRED HEART COLLEGE, THEVARA

SESSION PLAN					
ACADEMIC YEAR 2018-2019					
PROGRAMME	**:**	**BCA**	**DATE**	**:**	**12.11.2018**
SEMESTER	**:**	**2**	**BRANCH**	**:**	**BSc. Computer Applications**
SUBJECT CODE AND TITLE	**:**	**19U2CPCMT2 DISCRETE MATHEMATICS**	**CREDIT**	**:**	**4**
FACULTY NAME	**:**	**Mrs. NEETHU THOMAS**			
PROGRAMME OUTCOMES (POs)	**:**	**PO1**-To appreciate the basic principles of Boolean algebra, Logic, Set theory. **PO2-**To learn theapplications of hamming code and its examples. **P03**.-Ability to explore different types of functions and relations. **PO4 -**Ability to pursue Mathematical Induction. **PO5**-To learn the Fundamental Counting Principle with example. **PO6**–Ability to solve problems using multiplication rule. **PO7**- To understand permutations and combinations. **PO8**- Ability to use logical connectives. **PO9**- To understand the Axioms and laws and De-Morgan's law. **PO10**-Ability to distinguishDisjunctive normal form (DNF) and Conjunctive normal form (CNF**).** **PO11**-To learn Tautologies, rules of inference. **PO12-** To identify theProof by adopting a premise and the proof by resolution. **PO13-** To learn Definition of graph, representation. **PO14**- To differentiate types of trees and tree searching **PO15-** Ability to exploreEuler circuit and Eulerian Graph, **PO16**-Ability to pursue Single- Source Shortest path and Dijkstras Algorithm. **PO17**- All-pair Shortest path and Floyd's WarshallAlgorithm				

MODULE I **Preliminaries**				
S. No	**Topic**	**No of Session(s) Required**	**Value additions**	**POs**
1	Introduction and syllabus discussion	1		
2	Basic set Theory, terminology	1		PO1
3	Venn diagrams, truth table and proof	2		PO1
4	Functions and relations, partial orderings and equivalence relations	4		PO3

5	An application of Hamming codes.	1		PO2
6	Mathematical induction	2	**Assignment** Use the Principle of Mathematical Induction to prove that if a set A has n elements, then its power set P(A) has 2n elements	PO4
MODULE 2 Combinatorics				
S. No	**Topic**	**No of Session(s) Required**	**Value additions**	**POs**
7	The theory counting.	1		PO5
8	The multiplication rule	2		PO6
9	Permutations- ordered sample and unordered samples without repetition.	2	**Assignment** Problems on Permutation	PO7
10	Permutations involving indistinguishable objects	1		PO7
11	Permutation involving indistinguishable objects	1		PO7
12	Multinomial co-efficient	1		PO7
13	unordered samples with repetition	2		PO7
14	**CIA I**			
MODULE 3 Propositional Calculus				
S. No	**Topic**	**No of Session(s) Required**	**Value additions**	**POs**
15	Proposition, compound proposition, truth table for basic operators	1	**Seminar** Logical connectives and logical equivalence	PO1
16	Connectives, theorems from Boolean algebra, De-Morgan's law	1		PO1 PO8 PO9
17	Normal forms, rules of inference	2		PO10
18	Chain rule and modus ponens, chains of inference	2		PO10
19	tautology	1		PO11

20	proof by adopting a premise	1		PO12
21	Reductio- ad-absurdum, proof by resolution.	2		PO12

MODULE 4
Graphs and Algorithms

S. No	Topic	No of Session(s) Required	Value additions	POs
22	Introduction to graphs and basic terminologies.	1		PO13
23	Trees and types of trees	1		PO14
24	Leonhard Euler and the seven bridges of Konigsberg	2		PO14 PO15
25	spanning trees, minimal spanning trees, binary trees	2		PO14
26	tree searching- inorder, preorder and post order	2		PO14
27	Planar graphs and Euler's theorem	2	**Assignment** Problems on Euler's Algorithm	PO15
28	**CIA II**			
29	The shortest path problem, Dijkstras Algorithm	2	**Assignment** Problems on Dijkstras Algorithm	PO16
30	two "all-pairs" Algorithm	1		PO17
31	Floyd's Algorithm	1		PO17
32	Marshal's Algorithm.	1		PO17

TEXTBOOKS	REFERENCES
1. Petergray – Logic, Algebra and databases (chapter 3), Affiliated East West press pvt Ltd. 2. Robert J mcEliece, Robert B Ash and Carol Ash – Introduction to discrete mathematics (chapter 1,2 and 4) , Mc.Graw Hill.	1. S. Lipschutz : Set Theory and related topics (Second Edition), Schaum Outline Series, Tata McGraw-Hill Publishing Company, New Delhi. 2. R.G..Stoll- Set Theory and Logic 3. P.R. Halmos - Naive Set Theory, Springer 4. John Clark & Derek Allen Holton - A first book at graph theory (Allied Publishers) 5. Douglas B west – Introduction to Graph Theory , Pearson Education

Details on OTHER ACTIVITIES: Paralleling the objectives of the course, these include:

Readings are listed on the syllabus for the date due. They are listed as required and recommended to assist students in prioritizing their workload. Some weeks have *hefty* reading assignments, and students will want to plan ahead to manage their workloads. Required means just that. All required readings are from the two texts. Handouts will be provided by the instructor.

Study questions will be provided for each class to assist students in reflecting of readings and preparing adequately for class discussions. ***Study groups are highly recommended to improve class participation and learning***.

Attendance and participation. As a skills-development course, attendance and participation are essential to learning. Attendance, preparation, and participation are expected for each class. Class participation will be graded, based on the criteria listed below.

GRADING: Grades will be determined as follows: (1) change agent credo and presentation: 25% of CIA 1 ; (2) change agent interview and reflection: 25% of CIA 2 (3) group consulting report and reflection 50 % of final marks (4) class participation will be given marks –case discussions, quiz and managerial games (25% for every entry in CIA)

Papers and assignments are due by class time on the dates listed on the syllabus (with the exception of the final paper which is due by noon). **Late papers will be lowered one full letter grade for the first day of lateness. Papers more than one week late will constitute an automatic failure.** Exceptions are possible only for serious reasons and only with prior instructor approval. **NO EXCEPTIONS**. Organization, time management, and responsible follow-through are important professional skills.

Criteria for determining class participation grades are the following:

(1) *quality*: responses that reflect deep and accurate understanding of materials and contribute to class learning

(2) *quantity*: active involvement in discussions and activities in each class throughout the term

(3) *integrativeness*: responses that: (a) enable others to see the relevance of issues to course goals; and (b) demonstrate abilities to integrate learnings from past discussions, activities, readings, or course

Criteria for grading written papers include:

(1) depth of demonstrated learning

(2) number, strength, and accurate use of references to relevant literature

(3) abilities to integrate accurately and deeply theories and ideas from course discussions and readings

(4) clarity, quality, and organization of writing and analysis.

(5) quality and quantity of learning about your own approach(es) to change management.

SESSION PLAN					
ACADEMIC YEAR 2018-2019					
PROGRAMME	**:**	**BCA**	**DATE**	**:**	**12.11.2018**
SEMESTER	**:**	**2**	**BRANCH**	**:**	**BSc.Computer Applications**
SUBJECT CODE AND TITLE	**:**	**19U2CRBCA4 Operating System**	**CREDIT**	**:**	**4**
FACULTY NAME	**:**	**Mrs. NEETHU THOMAS**			
PROGRAMME OUTCOMES(POs)		**PO_1: To introduce the fundamental concepts and principles of operating systems.** **PO_2: To get an overview of the capabilities and limitations of operating systems.** **PO_3: To learn the mechanisms of OS to handle processes and threads and their communication.** **PO_4: To learn the mechanisms involved in memory management in contemporary OS.** **PO_5: To gain knowledge on distributed operating system concepts that includes architecture, Mutual exclusion algorithms, deadlock detection algorithms and agreement protocols.** **PO_6: To know the components and management aspects of concurrency management.** **PO_7: To emphasize the functions of operating systems to the computer system, the system operator (user), and variations in the design and implementations of operating systems.** **PO_8: To focus on Foundational concepts, Process management.** **PO_9: To learn Memory management, virtual memory.** **PO_10: To understand various page replacement algorithms.** **PO_11: To learn the protection and security measures of file system.**			

MODULE 1 **Introduction to Operating System**				
S. No	**Topic**	**No of Session(s) Required**	**Value additions**	**POs**
1.	Syllabus discussion and Introduction to OS	1		PO_1 PO_4
2.	Components of Operating System	2	**Assignment** Capabilities & limitations of an Os	PO_1 PO_2
3.	Types of OS • Batch Processing • Multiprogramming	1		PO_3
4.	• Multiprocessing and timesharing • Online and Real-time OS	1		PO_3
5.	Evolution of OS and Operating System Operations	1		PO_2 PO_3
6.	Operating System Operations and services	2	**Assignment**Functions of OS	PO_2 PO_3
7.	User Operating System Interface	1		PO_3
8	System Calls, Types of System Calls	2		PO_3

9	User Operating System Interface	2		PO_3
10	Types of System Calls	2		PO_3
11	Revision- Module1	1		
	MODULE 2 **Process Management**			
12	**Process:** Basic Concepts, PCB,	1		PO_8
13	Queuing diagram	2		PO_8
14	Process Scheduling	2		PO_8
15	**CIA I**			
16	**Threads**: Introduction to Threads, Single and Multi-threaded processes and its benefits.	2		PO_3
17	User and Kernel threads	1		PO_3
18	Multithreading models, Threading issues.	1		PO_3
19	Operations on Processes	2		PO_4
20	Inter process communication-Shared memory	2		PO_4
21	Inter process communication – Message Passing	1		PO_4
22	Process Scheduling -Scheduling Criteria	1		PO_4
23	Scheduling Criteria	1		PO_4
24	Preemptive and non preemptive scheduling	1	**Assignment** Preemptive and non preemptive scheduling Algorithms	PO_4
25	Scheduling Algorithm -FCFS	1		PO_4

26	Scheduling Algorithm -SJF	1		PO_4
27	Scheduling Algorithm -Priority	1		PO_4
28	Scheduling Algorithm-RR	1		PO_4
29	Scheduling Algorithm-Multilevel Queue	1		PO_4
30	Scheduling Algorithm- Problems	2	Solve the Scheduling Algorithm-Problems	PO_4
31	Multiple Processor Scheduling.	1		PO_5
32	The Critical Section problem	1		PO_5
33	Synchronization Hardware,	1		PO_5
34	Semaphores	1		PO_5
35	Problems of Synchronization	2		PO_5
36	Monitors	1		PO_5
37	Dead Locks : System Model	1		PO_5
38	Dead Lock Characterization	1		PO_5
39	Resource Allocation Graph	2		PO_5
40	Methods of Handling Dead Locks, Dead Lock Prevention	1		PO_5
41	Dead Lock Avoidance	1		PO_5
42	Dead Lock Avoidance- Bankers Algorithm	1		PO_5
43	Bankers Algorithm Problem	1		PO_5
44	Dead Lock Detection	1		PO_5
45	Dead Lock Detection methods	1		PO_5
46	Recovery from Dead Lock	1		PO_5
47	Problems related to dead lock	1		PO_5

48	Revision- Module1I	1		
	Module 3 **Storage Management**			
49	Memory Management Strategies - Swapping	1		PO_9
50	Contiguous memory allocation	1		PO_9
51	Paging	2		PO_9
52	Segmentation	2		PO_9
53	Virtual Memory Management	1		PO_9
54	Demand paging	2		PO_9
55	Page Replacement Algorithm	4		PO_9
56	**CIA II**			PO_9
57	Allocation of Frames, Thrashing,	1		PO_9
58	Operating System Examples	1		PO_9
59	Page size and other considerations, Demand segmentation	2		PO_9
60	**File-System Interface**: File concept, Access Methods	1	**Seminar** File System, File Concept	PO10
61	File- system Mounting and File sharing	1		PO10
62	Protection and consistency semantics	1		PO10
63	**File-System Implementation**: File-System structure and Implementations	2		PO10
64	Directory structure and Directory Implementation	2		PO10

65	Allocation Methods	1		PO10
66	Free-space Management	2		PO10
67	Efficiency and Performance, Recovery	1		PO10
68	Revision- Module III			
	Module 4 **Protection and Security**			
69	**Protection**: Goals of Protection, Domain of Protection	2		PO11
70	Access Matrix and Implementation of Access Matrix	2		PO11
71	Revocation of Access Rights	1		PO11
72	Capability- Based Systems	1		PO11
73	Language – Based Protection	1		PO11
74	**Security:** Security Problem	1	**Assignment** Security problems of File Systems	PO11
75	User Authentication	1		PO11
76	One – Time Password,	1		PO11
77	Program Threats	1		PO11
78	System Threats	1		PO11
79	Cryptography	1		PO11
80	Computer – Security Classifications.	1		PO11

REFERENCES

- Milan Milonkovic, Operating System Concepts and design, II Edition, McGraw Hill 1992.
- Tanenbaum, Operation System Concepts, 2nd Edition, Pearson Education.
- Silberschatz / Galvin / Gagne, Operating System,6th Edition,WSE (WILEY Publication)
- William Stallings,Operating System, 4th Edition, Pearson Education.
- H.M.Deitel, Operating systems, 2nd Edition ,Pearson Education
- Abraham Silberschatz and peter Baer Galvin, Operating System Concepts, 8th Edition, Pearson Education 1989 (Chapter 1,3.1,3.2,3.3,3.4,3.6,4,5,6 (Except 6.8,6.9), 7, 8,9,10,11,13, (Except 13.6) 19 (Except 19.6),20(Except 20.8, 20.9), 22,23)
- Nutt: Operating Systems, 3/e Pearson Education 2004

SESSION PLAN					
ACADEMIC YEAR 2018-2019					
PROGRAMME	**:**	**BCA**	**DATE**	**:**	**05.11.2018**
SEMESTER	**:**	**II**	**BRANCH**	**:**	Computer Science,Core
SUBJECT CODE AND TITLE	**:**	**OOPS with C++**	**CREDIT**	**:**	**4**
FACULTY NAME	**:**	**Mrs. Christy Jacqueline**			
PROGRAMME OUTCOMES (POs)	**:**	**PO1 – Explain the basic concepts of OOPs** **PO2- Understand algorithmic thinking and apply it in programming** **P03- Understand to code using c++ control structures** **PO4- Understand and manipulate arrays and pointers** **PO5- To explore console Input/Output Operators** **PO6- To understand how to implement various important features of class**			

S. No	Topic	No of Session(s) Required	Value additions	POs
UNIT -1				
1	Introduction	3		PO1 PO2
2	Procedure Oriented Versus Object Oriented Programming Learning Outcome: ➔ Compare procedure oriented and Object Oriented programming?	4		PO1 PO2

3	Merits and Demerits of OOPS Learning Outcome: ➔ List the merits and demerits of OOPS? ➔ Discuss the importance of OOPS concepts ➔ Discuss OOPS and its characteristics?	2	Reading: Robert I.(2006). Object Oriented Programming in c++, Galgotta Publications References	PO1, PO2 PO5
4	Data types Learning Outcome: ➔ Explain the different data types in C++? ➔ To understand different tokens in C++?	3		PO1 PO2
5	Input and Output Learning Outcome: ➔ Outline the basic input and output operations in c++?	3	Quiz	PO1 PO2
6	Decision and Loop Learning Outcome: ➔ Outline the use of control statement in c++ ➔ To Understand and evaluate the importance of different control statements in C++.	3	Quiz	PO1 PO2
7	Structures Learning Outcome: ➔ Discuss on various type of heterogeneous data structures	1	Revision	PO1 PO2

8	Basics of Structures: ➔ To understand the declaration and definition of structure ➔ To know how to access the structure members ➔ Discuss the basics on structure	1		PO1
9	Unions: <u>Learning Outcome:</u> ➔ To understand the basics of Union ➔ Differentiate structure and union	1		PO1
10	Class Learning Outcome: ➔ Defining the data members and member functions ➔ Define class and Object with an example ➔ Illustrate the concepts of classes and objects using real world examples	1	Quiz	PO1 PO2 PO6
11	Access – Specifier Learning Outcome: ➔ To illustrate the use of access specifiers ➔ To demonstrate how to use access specifiers which helps to provide aces permission in a program ➔ T	1		PO2

12	Accessing the member function Learning Outcome: ➔ To access the member functions inside and outside the class	1		PO3
13	Arrays, Class and Structures Learning Outcome: ➔ Differentiate between class, structure and arrays	1		PO2 PO6
14	Functions in C++ Learning Outcome: ➔ To understand the function declaration, definition, built in functions ➔ Differentiate between built in function and user defined function ➔ Describe functions and its types	1	Stroustup (2005), The C++ programming Language (3rd Edition) Pearson Publications	PO2
15	Functions in c++ Learning Outcome: ➔ To call the function, passing parameter-actual and formal parameters ➔ To overload function ➔ To pass different types of arguments and different number of arguments ➔ Explain about function overloading	1	Practical/ Assignment	PO2 PO6
16	Inline function Learning Outcome: ➔ Explain difference between inline function and function overloading	1		PO2
17	Constructor and Destructor Learning Outcome: ➔ To understand Constructor with and without arguments ➔ To able to understand constructor with default arguments ➔ Demonstrate the use of constructor and destructor in c++	1	Quiz	PO2

18	Copy constructor Learning Outcome: ➔ How to Manipulate private data members ➔ Describe copy constructor ➔ Differentiate between copying object and copy constructor	1	Practical	PO2
19	Overloading Learning Outcome: ➔ Defining operator overloading ➔ Illustrate operator overloading using example program	2	Practical	PO2
20	Data Type Conversion Learning Outcome: ➔ To describe data conversion with example ➔ Illustrate an example to explain the data conversion ➔ Illustrate an example to explain the conversion using objects	3	Schildt, H & Kanetkar Y (2010) C++ completer, Tata McGraw Hill	PO2
	UNIT -2 **INHERITANCE**			
21	Inheritance Learning Outcome: ➔ Discuss about about the base class and derived class ➔ Explain about how to define derived classes ➔ Explain the concept of inheritance ➔ Need and advantages of inheritance	4		PO1 PO2 PO6
22	Access specifiers in Inheritance Learning Outcome: ➔ Discuss about the access specifiers with respect to inheritance ➔ Summarize the public, private and inheritance-member accessibility	2		PO1 PO2 PO6
23	Level of Inheritance Learning Outcome:	1	Quiz	PO1 PO6

	➔ Discuss in detail about the different types of inheritance ➔ Identify and understand different levels of inheritance? ➔ Describe multiple and multi-level inheritance? ➔ Differentiate and compare different types of inheritance?			
	UNIT -3			
24	Pointers Learning Outcome: ➔ To elaborate the pointers concept in c++ ➔ To understand pointer declaration and accessing the members	3		PO2 PO4 PO6
25	Memory Management in pointers Learning Outcome: ➔ Explain memory management techniques in c++ ➔ Outline the use of new and delete operators in c++ ➔ To know and understand the usage of 'this' pointer.	2	Schildt, H & Kanetkar Y (2010) C++ completer, Tata McGraw Hill	PO4 PO6
26	Virtual Function: Learning Outcome: ➔ To know about the virtual function ➔ Identify the need for virtual functions ➔ Demonstrate normal and virtual member functions accessed with pointer	2		PO4 PO6
27	Pure Virtual Function Learning Outcome: ➔ Describe about the pure virtual function ➔ Build programs using pure virtual function	3	Seminar	PO4 PO6
28	Abstract class and Virtual base class Learning Outcome: ➔ To describe abstract class ➔ What is virtual base class?	2	Seminar	PO4 PO6

	UNIT -4			
29	Friend Function and static functions Learning Outcome: ➔ Outline the purpose of friend function and static function ➔ Outline the significance of friend function ➔ Describe the static function and implementing it ➔ How to access static function	2		PO1 PO6
30	Console input/output operator, Exception Handling and Templates Learning Outcome: ➔ Explain C++ stream classes with examples ➔ Identify c++ Input/Output streams ➔ Explain about Exception handling in c++ ➔ To understand the concepts of templates and need of templates	3	Stroustup (2005), The C++ programming Language (3rd Edition) Pearson Publications	PO5 PO6
31	Manipulators and user defined manipulators Learning Outcome: ➔ Compare unformatted and formatted Input and output operators ➔ Identify the scenarios to apply unformatted and formatted input and output operators	1	Quiz	PO5 PO6
	UNIT -5			
32	Files Learning Outcome: ➔ Define class for file stream operators ➔ Discuss on fopen() and fclose() function	1		PO1 PO6
33	Writing and reading an object from disk Learning Outcome:	2		PO1 PO2

	➔ Describe the process of reading an object in file with examples			PO6
34	Different types of files: ➔ Explain the use of Binary Input/Output and character Input/Output	3		
35	Stream Class Learning Outcome: ➔ List istream and ostream functions along with their purposes	2		PO6
36	Tellg() function and seekg() functions Learning Outcome: ➔ Discuss about tellg() and seekg() functions in c++?	2	Quiz	PO1 PO6
37	Revision and Seminar/Viva	1		
38	Revision and Seminar/Viva	2	Viva	

TEXTBOOKS	REFERENCES
1. E. Balaguruswamy: Object Oriented Programming with C++, Tata McGraw Hill. Publications **2.** Strousstrup: The C++ Programming Language, Pearson Edition, 3rd Edition 3. Lafore Robert: Object Oriented Programming in Turbo C++, Galgotia Publications 4. Let us C++ by Yeshwanth Kanetkar	1. Lippman: C++ Primer, 3/e Pearson Education 2. C++ completer reference by Herbert Schildt, Tata McGraw Hill Publications.

COURSE ASSIGNMENTS: In addition to readings for each class and participation in class discussions and activities, there are three assignments for this course:

- ***Assignment 1:***

➔ ***Control structures***

➔ ***Procedural Versus Object Oriented programming***

- ***Assignment 2:***

➔ ***OOPS concepts***

➔ ***Functions in c++***

➔ ***Major difference between C and C++***

Each student will present a **topic relevant to OOPS with c++**:
1) PART I: A presentation of the allocated topic is conducted
(2) PART II: Viva session for the presentation
(3) PART III: Report on the topic should be submitted

Faculty Signature

SACRED HEART COLLEGE, THEVARA

SESSION PLAN					
ACADEMIC YEAR 2018-2019					
PROGRAMME	**:**	**Science**	**DATE**	**:**	**05.11.2018**
SEMESTER	**:**	**2**	**BRANCH**	**:**	**BCA**
SUBJECT CODE AND TITLE	**:**	**U2CRBCA6 – Data Structures using C**	**CREDIT**	**:**	**3**
FACULTY NAME	**:**	**SHAILESH S**			
PROGRAMME OUTCOMES (POs)	**:**	**PO1** - The concept of elementary data organization. **PO2** - Dynamic memory allocation, pointer, recursion and string operation **PO3** - Algorithm and its efficiency measure by means of asympotic notation. **PO4** - Ability to analyze algorithms and algorithm correctness. **PO5** - Ability to choose appropriate data structure as applied to specified problem definition. **PO6** - Ability to handle operations like searching, insertion, deletion, traversing mechanism etc. on various data structures. **PO7** - Ability to apply concepts learned in various domains like DBMS, compiler construction etc. **PO8** - Ability to use linear and non-linear data structures like stacks, queues, linked list etc. **PO9** - Ability to have knowledge of tree and graphs concepts. **PO10**- Ability to understand different sorting algorithm.			

S. No	Topic	No of Session(s) Required	Value additions	POs
MODULE 1 **Introduction to Data Structures**				

1	Introduction and classification of data structure & Elementry data organization	1		PO1
2	Introduction to Algorithm & complexity	1		PO3 PO4
3	Complexity analysis of algorithm	1		PO3 PO4
4	Character array & String processing	1		PO2
5	String processing functions	1		PO2
6	Pointer, Accessing variable and structure pointer.	1		PO2
7	Memory allocation	1		PO2
8	Dynamic Memory Allocation functions	1		PO2
9	Concept and example of Reccrssion	1		PO2
10	Summary of Module I	1		PO5 PO7
MODULE 2 **Searching and Sorting**				
11	Introduction to Searching & Linear search and analysing complexity	1		PO6

12	Binary Search and analysing complexity	1		PO6
13	Introduction to Sorting, insertion sort algorithm & analysis	1		PO10
14	Bubble sort algorithm & analysis	1		PO10
15	Quict sort algorithm & analysis	1		PO10
16	Selection Sort algorithm & analysis	1		PO10
17	Merge Sort algorithm & analysis	1		PO10
18	Summary of Module II	1		PO5 PO7
	MODULE 3 **Stacks and Queues**			
19	Introduction to Stack	1		PO8
20	Array representation of stack	1		PO8
21	Applicattion of Stack	1		PO8
22	Infix to Post fix conversion & evaluation	1		PO8
23	Infix to Post fix conversion & evaluation (Implementation)	1		PO8
24	Queue defination and Application	1		PO8
25	Array representation andType of queue	1		PO8

26	Summary of Module III	1		PO5 PO7
MODULE 4 LINKED LIST				
27	Link List & Type of Link List	1		PO8
28	Application, advantage & disvantage	1		PO8
29	Operation on singly link list	1		PO8
30		1		PO8
31		1		PO8
32	Operation on doubly link list	1		PO8
33		1		PO8
34		1		PO8
35	Operation on circular link list	1		PO8
36		1		PO8
37		1		PO8
38	Summary of Module IV	1		PO5 PO7
MODULE 5 Tree Graphs and their Applications				
36	Tree defination and application	1		PO9
37	Different tree terminology	1		PO9
38	Binary tree & its type	1		PO9

39	Implementation of Binary tree	1		PO9
40	Binary Search Tree & its application	1		PO9
41	BST Travasal	1		PO9
42	Implementation of BST	1		PO9
43	Heap Tree	1		PO9
44	Graph concept and application	1		PO9
45	Representation of graph	1		PO9
46	Graph BFS Travasal	1		PO9
47	Implementation of BFS	1		PO9
48	Graph DFS Travasal	1		PO9
49	Implementation of DFS	1		PO9
50	Summary of Module V	1		PO5 PO7

TEXTBOOKS/REFERENCES

1. Professional Mobile Application Development by Jeff McWherter, Scott Gowell, 2012
2. Mobile Computing Principles: Designing and Developing Mobile Applications by Reza B'Far, Cambridge University, 2005
3. Mobile Applications: Architecture, Design, and Development by Valentino Lee, Heather Schneider and Robbie Schell, Pearson Education, 2004

COURSE ASSIGNMENTS: In addition to readings for each class and participation in class discussions and activities, there are three assignments for this course:

Details on OTHER ACTIVITIES: Paralleling the objectives of the course, these include:
Readings are listed on the syllabus for the date due. They are listed as required and recommended to assist students in prioritizing their workload. Some weeks have *hefty* reading assignments, and students will want to plan ahead to manage their workloads. Required means just that. All required readings are from the two texts. Handouts will be provided by the instructor.
Study questions will be provided for each class to assist students in reflecting of readings and preparing adequately for class discussions. ***Study groups are highly recommended to improve class participation and learning***.
Attendance and participation. As a skills-development course, attendance and participation are essential to learning. Attendance, preparation, and participation are expected for each class. Class participation will be graded, based on the criteria listed below.

GRADING: Grades will be determined as follows: (1) change agent credo and presentation: 25% of CIA 1 ; (2) change agent interview and reflection: 25% of CIA 2 (3) group consulting report and reflection 50 % of final marks (4) class participation will be given marks –case discussions, quiz and managerial games (25% for every entry in CIA)

Papers and assignments are due by class time on the dates listed on the syllabus (with the exception of the final paper which is due by noon). **Late papers will be lowered one full letter grade for the first day of lateness. Papers more than one week late will constitute an automatic failure.** Exceptions are possible only for serious reasons and only with prior instructor approval. **NO EXCEPTIONS**. Organization, time management, and responsible follow-through are important professional skills.

Criteria for determining class participation grades are the following:
(1) *quality*: responses that reflect deep and accurate understanding of materials and contribute to class learning
(2) *quantity*: active involvement in discussions and activities in each class throughout the term

(3) *integrativeness*: responses that: (a) enable others to see the relevance of issues to course goals; and (b) demonstrate abilities to integrate learnings from past discussions, activities, readings, or course

Criteria for grading written papers include:

(1) depth of demonstrated learning

(2) number, strength, and accurate use of references to relevant literature

(3) abilities to integrate accurately and deeply theories and ideas from course discussions and readings

(4) clarity, quality, and organization of writing and analysis.

(5) quality and quantity of learning about your own approach(es) to change management

Faculty Signature **CEO Signature**

COURSE PLAN

COURSE : **BASIC STATISTICS**

Semester : III

Course Teacher : Reshmi A.N

Hours/Week: 04

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COURSE OBJECTIVES

Statistics plays a pivotal role in decision making. Collection, classification, analysis and presentation of data are some of the important functions of Statistics. This course is designed to enable the students to understand the basic functions of statistics

Basic Reference

1 S.C. Gupta and V. K.Kapur. Fundamentals of Mathematical Statistics, Sultan Chand and sons New Delhi

2 S.P. Gupta. Statistical Methods ,Sultan Chand & Sons Delhi

3 B.L. Agarwal. Basic Statistics, New Age International (p) Ltd.

4 S.C.Gupta and V.K.Kapoor. Fundamentals of Applied Statistics,Sultan Chand & Sons Delhi

COURSE OUTCOMES

At the end of the course, the student will be able to

(i) to tabulate statistical information given in descriptive form.
(ii) to use graphical techniques and interpret.
(iii) to compute various measures of central tendency, dispersion.
(iv) to compute correlation coefficient and Regression

(v) to do problems Based on probability
(vi) To do Time Series Analysis

Sessions	Topic	Method	Remarks/Reference
1.	Bridge course	PPT	
2.	Bridge course	PPT	
3.	Measures of central tendency	Lecturing	Module I
4.	Mean	Lecturing	
5.	median	Lecturing	
6.	Mode	Lecturing	
7.	Geometric mean and Harmonic mean, problems	Lecturing	
8.	Absolute and relative measures of dispersion	Lecturing	
9.	Range, Quartile Deviation	Lecturing	Module 2
10.	Mean Deviation	Lecturing	
11.	Standard Deviation	Lecturing	
12.	Standard Deviation	Lecturing	
13.	Properties, Problems	Lecturing	
14.	deciles, percentiles	Lecturing	
15.	deciles, percentiles	Lecturing	
16.	Coefficient of Variation	Lecturing	
17.	Problems graphical method	Lecturing	
18.	Box plots	Lecturing	
19.	Box plots	Lecturing	
20.	Correlation	Lecturing	
21.	Rank Correlation	Lecturing	
22.	Regression Equations	Lecturing	
23.	Revision		

	CIA – I	2 Hrs	
	Permutation and combination		Module 3
22	Probability concepts,Random Experiment	Lecturing	
23	Sample Space,Events,Probability Measure	Lecturing	
24	Classical definition of probability	Lecturing	
25	Statistical Definition of probability	Lecturing	
26	Axiomatic Definition Of probability	Lecturing	
27	Addition THeorem	Lecturing	
28	Conditional Probability	Lecturing	
29	Independence of events	Lecturing	
30	Multiplication Theorem	Lecturing	
31	Total probability Law	Lecturing	
32	Baye's Theorem	Lecturing	
	Problems		
33	Index numbers	Lecturing	Module 4
34	Simple and Weighted index numbers	Lecturing	
35	Laspeyre's	Lecturing	
36	Paasche's	Lecturing	
37	Bowley's	Lecturing	
38	Fisher's index numbers	Lecturing	
39	Test for index numbers	Lecturing	
40	Test for index numbers	Lecturing	
41	Cost of living index numbers	Lecturing	
43	Constructions of Cost of living index numbers	Lecturing	
44	Time series- Components of a time series data	Lecturing	
45	Determination of trend- Moving average	Lecturing	
46	curve fitting methods	Lecturing	

47	Computation of and seasonal indices	Lecturing	
48	Method of simple averages	Lecturing	

ASSIGNMENTS

	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	Solving Problems on Measures of central tendency,Dispersion in Excel
2	Solving Problems on correlation Regression in Excel
4	Solving Problems on Time Series in Excel

SACRED HEART COLLEGE(AUTONOMOUS), THEVARA

DEPARTMENT OF COMPUTER SCIENCE

COURSE PLAN

ACADEMIC YEAR 2019-2020

PROGRAMME	**BCA (SPECIALISATION IN MOBILE APPLICATIONS AND CLOUD TECHNOLOGY)**
COURSE CODE AND TITLE	**U3CRBCA8, Software Engineering**
HOURS/SEM	**4**
FACULTY NAME	**Mrs.Christy Jacqueline**

PROGRAMME SPECIFIC OUTCOMES(PSOs)

PSO1	Apply the theoretical foundations of computer science in modelling and developing solutions to the complex and real world problems.
PSO2	Comprehend, explore and build up computer programs, applications in the allied areas like Algorithms, Multimedia, Web Design and android applications for efficient design of computer-based systems that meet the needs of industry and society.
PSO3	Develop skills in android and cloud technology development so as to enable the graduates to take up employment/self-employment in global technical market.
PSO4	Apply knowledge of layered network models, protocols, technologies, topologies and security policies for building network and internet based applications.

COURSE OUTCOMES (COs)

CO1	To apply the software development life cycle model to a development project.
CO2	To collect and analyse user requirments.
CO3	To identify and apply appropriate software architetcures and patterns to carry out high level design of a system.
CO4	To perform background research and a feasibility study prior to embarking on a development project.
CO5	To know how and when to adapt or replace the lifecycle model by other alternatives.

MODULE I								
Sl.No	**Session**	**Topic**	**Method of Teaching**	**Value Additions**	**CO**	**PO/PSO**	**Cognitive Leve(CL)**	**Knowledge Category (KC)**
1	2	Introduction to Software Engineering paradigm	PPT		CO1	PSO1	R	F
2	2	Verification, validation	PPT		CO1	PSO1	U	C
3	3	Life Cycle Models	PPT	QUIZ	CO1,CO5	PSO1	U	C
4	2	System Engineering	PPT		CO1	PSO1	U	C
5	2	Computer Based System	PPT		CO1	PSO2	U	C
6	2	Business Process engineering	PPT		CO1	PSO1	U	C
	2	Product Engineering Overview	PPT		CO1	PSO2	U	C
MODULE II								
8	2	Functional and non functional	PPT	QUIZ	CO1,CO2	PSO1	U	F
9	2	Software Document	PPT		CO3	PSO1	A	C
10	2	Requirement Engineering process	PPT		CO4,CO1	PSO1	U	C
11	2	Feasibility Studies	PPT		CO5,CO4	PSO1	U	F
12	2	Software Prototyping	PPT		CO6	PSO1	A	C
13	2	Prototyping in the software process	PPT		CO7		U	C
14	2	Data functional and Behavorial models	PPT		CO8		U	C
15	2	Structured Anlaysis and Data Dictionary	PPT		CO9	PSO1	A	C
MODULE III								
16	1	Systems Engineering	PPT		CO3	PSO2,PSO1	U	F
17	1	Analysis Concepts	PPT		CO3,CO1	PSO1	U	F
18	1	Design Process and concepts	PPT		CO3,CO4	PSO1	U	C
19	2	Modular Design	PPT	QUIZ	CO3	PSO1	U	C
20	1	Design Heuristic	PPT		CO3	PSO1	U	F
21	1	Architecture Design	PPT		CO4,CO3	PSO1	C	C
22	2	Data Design	PPT		CO3	PSO1	U	C
23	2	User Interface Design	PPT		CO3	PSO1	U	C
24	1	Real Time Software Design	PPT		CO3	PSO2	U	C
25	2	System Design	PPT		CO3	PSO2	U	C
26	1	Real Time Executives	PPT		CO3,CO4	PSO1	U	C
27	1	Data Acquition System	PPT		CO3	PSO1	U	C
28	1	Monitoring and Control System	PPT		CO3	PSO1	U	C
MODULE IV								
29	2	Taxonomy of Software Testing	PPT		CO1,CO4	PSO1	C	C
30	2	Types of software Test	PPT		CO1,CO4	PSO1	C	C
31	2	Black Box Testing	PPT	QUIZ	CO4	PSO1,PSO2	C	C
32	2	Testing boundary Conditions	PPT		CO4	PSO2	C	C
33	1	Structural Testing	PPT		CO4	PSO2	C	C
34	2	Test Coverage Criteria Based on Data Flow Mechanism	PPT	QUIZ	CO1,CO4	PSO1,PSO2	C	C
35	1	Types of Testing- Regression, Unit, Integration and Validation.	PPT	COMPARISON STUDY	CO1,CO4	PSO1,PSO2	C	C
36	1	System Testing and Debugging	PPT		CO4	PSO2	C	C
37	1	Software Implementation Techniques	PPT		CO2,CO4	PSO1,PSO2	C	C
MODULE V								
38	2	Measures and Measurements	PPT		CO5	PSO1	F	F
39	2	ZIPF's Law	PPT		CO4,CO5	PSO1	F	F
40	2	Software Cost Estimation	PPT		CO5	PSO1	C	F
41	2	Function Point Models	PPT		CO5	PSO1	C	C
42	2	COCOMO Models	PPT	*QUIZ*	CO1,CO5	PSO1	C	F

Sl.No	Session	Topic	Method of Teaching	Value Additions	CO	PO/PSO	Cognitive Leve(CL)	Knowledge Category (KC)
43	2	Delphi Method	PPT		CO5	PSO1	C	F
44	2	Earned Value Analysis	PPT		CO5	PSO1	C	F
45	2	Error Tracking	PPT		CO5	PSO1	C	C
46	2	Software Configuration Management	PPT		CO5	PSO1	C	C
47	2	Program Evolution Dynamics	PPT		CO5	PSO1	C	C
48	1	Software Maintenance	PPT		CO5,CO4	PSO1	C	C
49	1	Project planning and Scheduling	PPT		CO5,CO3	PSO1,PSO2	C	C
50	1	Risk Management	PPT		CO5	PSO1,PSO2	C	C
51	1	CASE Tools	PPT		CO5	PSO1	C	C

ASSIGNMENTS AND SEMINARS

Sl No	Module	Topic	Nature of Assignment
1	*I*	*Life Cycle Models*	*PPT*
2	*II*	*COMPARISON STUDY-Types of Testing-Regression, Unit, Integration and Validation.*	*HAND WRITTEN*
3	*III*	*RISK Management*	*PPT*

TEXTBOOKS AND REFERENCES

1	
2	
3	

SACRED HEART COLLEGE(AUTONOMOUS), THEVARA
DEPARTMENT OF COMPUTER SCIENCE
COURSE PLAN
ACADEMIC YEAR 2018-2019

PROGRAMME	BACHELOR OF COMPUTER APPLICATIONS	**SEMESTER**	3
COURSE CODE AND TITLE	U3CRBCA9 RDBMS	**CREDIT**	3
HOURS/WEEK	4	**HOURS/SEM**	60
FACULTY NAME	SANTHOSH KUMAR K P		

COURSE OBJECTIVES:

1	To understand the different issues involved in the design and implementation of a
2	To study the physical and logical database designs, database modeling, relational,
3	To understand and use data manipulation language to query, update, and manage a
4	To develop an understanding of essential DBMS concepts such as: database security,

CUM. HOURS	SESSIONS	TOPIC	LEARNING RESOURCES	NO. OF HOURS	VALUE ADDITIONS	COURSE OUTCOME
MODULE I						
1	1	Purpose of Database System	PPT	1		CO 1
2	1	Views of data	PPT	1		CO 1
3	1	Data Models	PPT	1		CO 1
4	1	Database Languages	PPT	1		CO 1
5	2	Database System Architecture – Database users and Administrator	PPT	1		CO 1
7	1	Entity– Relationship model – E-R Diagrams	Lecture	2		CO 1
8	1	Introduction to relational databases		1		CO 1
9	1	revision		1	QUIZ	CO 1
MODULE II						
10	1	The relational Model – Keys	Lecture	1		CO 2
12	2	Relational Algebra	Lecture	2		CO 2
13	1	Domain Relational Calculus	Lecture	1		CO 2
14	1	Tuple Relational Calculus	Lecture	1		CO 2
15	1	SQL fundamentals	Lecture	1		CO 3
17	2	Oracle data types, Data Constraints, Column level & table Level Constraints, working with Tables.	Lecture	2		CO 3
19	2	Defining different constraints on the table, Defining Integrity Constraints in the ALTER TABLE Command	Lecture	2		CO 3
21	2	Select Command, Logical Operator, Range Searching	Lecture	2	QUIZ	CO 3
22	1	Pattern Matching, Oracle Function, Grouping data from Tables in SQL, Manipulation Data in SQL	Lecture	1		CO 3
23	1	Joining Multiple Tables (Equi Joins), Joining a Table to itself (self Joins)	Lecture	1		CO 3
24	1	Sub queries Union, intersect & Minus Clause, Creating view, Renaming the Column of a view	Lecture	1		CO 3
25	1	Granting Permissions, - Updating, Selection	Lecture	1		CO 3
26	1	Destroying view Creating Indexes, Creating and managing User	Lecture	1		CO 3

27	1	Integrity – Triggers - Security	Lecture	1		CO 3
28	1	Advanced SQL features –Embedded SQL– Dynamic SQLMissing Information	Lecture	1		CO 3
29	1	Introduction to Distributed Databases and Client/Server Databases	Lecture	1		CO 3
TEST I						
MODULE III						
31	2	Functional Dependencies	Lecture	2		CO 4
32	1	Non-loss Decomposition	Lecture	1		CO 4
33	1	1NF	Lecture	1		CO 4
34	1	2NF	Lecture	1		CO 4
35	1	3NF	Lecture	1		CO 4
36	1	BCNF	Lecture	1		CO 4
39	3	Problems on normalization	Lecture	3		CO 4
40	1	Multi-valued Dependencies and 4NF	Lecture	1		CO 4
41	1	Join Dependencies and Fifth Normal Form	Lecture	1		CO 4
43	2	revision	Lecture	2	QUIZ	CO 4
TEST II						
MODULE IV						
44	1	Transaction Concepts	PPT	1		CO 5
45	1	Transaction Recovery	PPT	1		CO 5
46	1	ACID Properties	PPT	1		CO 5
47	1	System Recovery – Media Recovery	PPT	1		CO 5
48	1	Two Phase Commit	PPT	1		CO 5
49	1	Save Points – SQL Facilities for recovery	PPT	1		CO 5
50	1	Concurrency –Need for Concurrency	PPT	1		CO 5
51	1	Locking Protocols – Two Phase Locking	PPT	1		CO 5
52	1	Intent Locking – Deadlock	PPT	1		CO 5
56	4	Serializability – Recovery Isolation Levels	PPT	4		CO 5
57	1	SQL Facilities for Concurrency	PPT	1		CO 5
60	1	revision	PPT	3		CO 5

TEXT BOOKS & REFERNCES

1	Abraham Silberschatz, Henry F. Korth, S. Sudharshan, “Database System Concepts”,Fifth Edition, Tata McGraw Hill,
2	Ramez Elmasri, Shamkant B. Navathe, “Fundamentals of Database Systems”, Fourth Edition, Pearson/Addision Wesley,
3	Raghu Ramakrishnan, “Database Management Systems”, Third Edition, McGraw Hill, 2003

	DATE	TOPIC & NATURE OF ASSIGNMENT (INDIVIDUAL/GROUP – WRITTEN/PRESENTATION)	DATE OF SUBMISSION	MARKS	CO
1		Create a database application for a group of three student.	10-Sep		CO 6

SACRED HEART COLLEGE(AUTONOMOUS), THEVARA

DEPARTMENT OF COMPUTER SCIENCE

COURSE PLAN

ACADEMIC YEAR 2018-2019

PROGRAMME	**BCA [MOBILE APPLICATIONS AND CLOUD TECHNOLOGY]**	SEMESTER	3
COURSE CODE AND TITLE	**U3CRBCA10 COMPUTER NETWORKS**	CREDIT	3
HOURS/SEM	72		
FACULTY NAME	**Neethu A S**		

PROGRAMME SPECIFIC OUTCOMES(PSOs)

PSO 1	Apply the theoretical foundations of computer science in modelling and developing solutions to the complex and real world problems.
PSO 2	Comprehend, explore and build up computer programs, applications in the allied areas like Algorithms, Multimedia, Web Design and android applications for efficient design of computer-based systems that meet the needs of industry and society.
PSO 3	Develop skills in android and cloud technology development so as to enable the graduates to take up employment/self-employment in global technical market.
PSO 4	Apply knowledge of layered network models, protocols, technologies, topologies and security policies for building network and internet based applications.

COURSE OUTCOMES (COs)

CO 1	Independently understand basic computer network technology
CO 2	Identify the different types of network topologies and protocols
CO 3	Enumerate the layers of TCP/IP and explain the functions of each layer
CO 4	Identify the different types of network devices and their functions within a network
CO 5	Network Troubleshooting

SACRED HEART COLLEGE(AUTONOMOUS), THEVARA

BCA-DEPARTMENT OF COMPUTER SCIENCE

COURSE PLAN

Name of the Faculty : Shailesh S

Course: Programming in Java

Semester: III

AY - 2018 -2019 From: June 2018 To: november 2018

	Module Name	Chp	Section	Learning Objectives	Learning Outcomes	Session No.	Hours	Topic	Mode of Delivery	Methodology	Guest Faculty Assistance	Pre-class readings	Post-class tasks	Ref Books	Web Resources	Activities	Topic Coverage (Actual) including activities	Remarks
	INTRODUCTION	1				1	45 min	**The History and Evolution of Java** Java's Lineage 1. The Birth of Modern prmg : C 2. C++: The Next Step	Black Board/ PPT					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.	------			
		1				2	45 min	**The History and Evolution of Java** The Java Buzzwords The Evolution of Java Java SE 8 A Culture of Innovation	Black Board/ PPT					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.	------			
		2				3	90 min	**An Overview of Java** Object-Oriented Programming A First Simple Program A Second Short Program Two Control Statements 1. The if Statement 2. The for Loop	Black Board					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.	------			
		2				4	45 min	**An Overview of Java** Using Blocks of Code Lexical Issues 1. Whitespace 2. Identifiers 3. Literals 4. Comments 5. Separators The Java Keywords The Java Class Libraries	Black Board					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.	------			
		3				5	90 min	**Data Types, Variables, and Arrays** Java Is a Strongly Typed Language The Primitive Types Integers 1. byte 2. short 3. int 4. long Floating-Point Types 1. float 2. double	Black Board					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.	https://www.tutorialspoint.com/java/java_basic_datatypes.htm			
		3				6	90 min	**Data Types, Variables, and Arrays** Characters Booleans A Closer Look at Literals Variables 1. Declaring a Variable 2. Dynamic Initialization 3. The Scope and Lifetime Type Conversion and Casting Java's Automatic Conversions Casting Incompatible Types	Black Board					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.	https://www.tutorialspoint.com/java/java_basic_datatypes.htm			
		4				7	90 min	**Operators** Arithmetic Operators 1. The Modulus Operator 2. Arithmetic Compound 3. Increment and Decrement The Bitwise Operators 1. The Bitwise Logical Operators	Black Board					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.	------			
		4				8	45 min	**Operators** Boolean Logical Operators 1. Short-Circuit Logical Operators The Assignment Operator The ? Operator Operator Precedence	Black Board					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.	------			
		4				9	90 min	**Operators** Control Statements Java's Selection Statements 1. if 2. switch Iteration Statements 1. while 2. do-while	Black Board					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.	------			
	CLASSES	1				10	45 min	**Introducing Classes** Class Fundamentals 1. The General Form 2. A Simple Class Declaring Objects Assigning Object Reference	Black Board/ PPT					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.	------			
		1				11	45 min	**Introducing Classes** Variables Introducing Methods 1. Adding a Method to the box class 2. Adding a Method	Black Board					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.	------			
		1				12	45 min	**Introducing Classes** Constructors 1. Parameterized Constructors The this Keyword 2. Instance Variable Hiding Garbage Collection The finalize( ) Method A Stack Class	Black Board					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.	------			
		2				13	90 min	**A Closer Look at Methods and Classes** Overloading Methods 1. Overloading Constructors Using Objects as Parameters A Closer Look at Argument Passing Returning Objects Recursion	Black Board					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.	------			
		2				14	45 min	**A Closer Look at Methods and Classes** Recursion Introducing Access Control Understanding static Introducing final	Black Board					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.	------			
		2				15	90 min	**A Closer Look at Methods and Classes** Arrays Revisited Introducing Nested & Inner Classes Exploring the String Class Using Command-Line Arguments	Black Board					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.	------			
		2				16	45 min	**A Closer Look at Methods and Classes** Varargs: 1. Variable-Length Arguments 2. Overloading Vararg Methods	Black Board /PPT					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.	------			
		3				17	45 min	**Inheritance** Basics 1. Member Access and Inheritance 2. A More Practical Example 3. A Superclass Variable Can Reference a Subclass Object	Black Board					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.	------			
		3				18	45 min	**Inheritance** Using super 1. Using super to Call Superclass 2. A Second Use for super Creating a Multilevel Hierarchy	Black Board					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.	------			
		3				19	90 min	**Inheritance** When Constructors Are Executed Method Overriding Dynamic Method Dispatch 1. Why Overridden Methods? 2. Applying Method Overriding	Black Board					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.	------			
		3				20	45 min	**Inheritance** Using Abstract Classes Using final with Inheritance 1. To Prevent Overriding 2. To Prevent Inheritance The Object Class	Black Board/ PPT					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.	------			
	PACKAGES	1				21	45 min	**Packages and Interfaces** Packages 1. Defining a Package 2. Finding Packages & CLASSPATH 3. A Short Package Example	Black Board/ PPT					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.	------			
		1				22	45 min	**Packages and Interfaces** Access Protection 1. An Access Example Importing Packages	Black Board					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.	------			
		1				23	90 min	**Packages and Interfaces** Interfaces 1. Defining an Interface 2. Implementing Interfaces 3. Nested Interfaces	Black Board					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.	https://www.tutorialspoint.com/java/java_interfaces.htm			
		1				24	45 min	**Packages and Interfaces** Interfaces 1. Applying Interfaces 2. Variables in Interfaces 3. Interfaces Can Be Extended	Black Board					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.	https://www.tutorialspoint.com/java/java_interfaces.htm			
		1				25	45 min	**Packages and Interfaces** Default Interface Methods 1. Default Method Fundamentals 2. A More Practical Example 3. Multiple Inheritance Issues	Black Board					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.	https://www.tutorialspoint.com/java/java_interfaces.htm			
		1				26	45 min	**Packages and Interfaces** Use static Methods in an Interface Final Thoughts on Packages	Black Board					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.	------			
		2				27	90 min	**Exception Handling** 1. Fundamentals 2. Exception Types 3. Uncaught Exceptions	Black Board /PPT					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.	------			
		2				28	90 min	**Exception Handling** Using try and catch 1. Displaying a Description Multiple catch Clauses Nested try Statements	Black Board					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.	https://www.tutorialspoint.com/java/java_exceptions.htm			
		2				29	45 min	**Exception Handling** Throw Throws Finally Java's Built-in Exceptions	Black Board /PPT					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.	https://www.tutorialspoint.com/java/java_exceptions.htm			
		2				30	90 min	**Exception Handling** 1. Creating Your Own Exception Subclasses 2. Chained Exceptions 3. Three Recently Added Exception Features 4. Using Exceptions	Black Board					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.	------			
	MULTITHREADED PROGRAMMING	1				31	90 min	**Multithreaded Programming** The Java Thread Model 1. Thread Priorities 2. Synchronization	Black Board/ PPT					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.	https://www.tutorialspoint.com/java/java_multithreading.htm			
		1				32	45 min	**Multithreaded Programming** The Java Thread Model 1. Messaging 2. The Thread Class 3. Runnable interface	Black Board					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.	https://www.tutorialspoint.com/java/java_multithreading.htm			
		1				33	45 min	**Multithreaded Programming** The Main Thread Creating a Thread 1. Implementing Runnable 2. Extending Thread 3. Choosing an Approach	Black Board					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.	https://www.tutorialspoint.com/java/java_multithreading.htm			
		1				34	45 min	**Multithreaded Programming** Creating Multiple Threads Using isAlive( ) and join( ) Thread Priorities	Black Board					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.	------			
		1				35	45 min	**Multithreaded Programming** Synchronization 1. Using Synchronized Methods 2. The synchronized Statement	Black Board					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.	------			
		1				36	45 min	**Multithreaded Programming** Interthread Communication 1. Deadlock Suspending, Resuming, and Stopping Threads	Black Board					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.	------			
		1				37	45 min	**Multithreaded Programming** Obtaining A Thread's State Using Multithreading	Black Board /PPT					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.	------			
		2				38	45 min	**Input/Output: Exploring java.io** The I/O Classes and Interfaces File 1. Directories 2. Using FilenameFilter	Black Board					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.	------			
		2				39	45 min	**Input/Output: Exploring java.io** The I/O Classes and Interfaces File 1. The listFiles( ) Alternative 2. Creating Directories	Black Board					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.	https://www.tutorialspoint.com/java/java_files_io.htm			
		2				40	45 min	**Input/Output: Exploring java.io** The AutoCloseable, Closeable Flushable Interfaces I/O Exceptions Two Ways to Close a Stream	Black Board					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.	------			
		2				41	90 min	**Input/Output: Exploring java.io** The Stream Classes The Byte Streams 1. Input Stream 2. Output Stream 3. File Input Stream	Black Board /PPT					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.	https://www.tutorialspoint.com/java/java_files_io.htm			
		2				42	45 min	**Input/Output: Exploring java.io** The Byte Streams 1. File Output Stream 2. Byte Array Input Stream 3. Byte Array Output Stream	Black Board					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.	https://www.tutorialspoint.com/java/java_files_io.htm			
		2				43	45 min	**Input/Output: Exploring java.io** The Byte Streams 1. Filtered Byte Streams 2. Buffered Byte Streams 3. Sequence Input Stream	Black Board					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.	https://www.tutorialspoint.com/java/java_files_io.htm			
		2				44	45 min	**Input/Output: Exploring java.io** The Byte Streams 1. Print Stream 2. Data Output Stream 3. Random Access File 4. Data input stream	Black Board					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.	------			
		2				45	45 min	**Input/Output: Exploring java.io** The Character Streams 1. Reader 2. Writer 3. File Reader	Black Board/ PPT					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.	https://www.tutorialspoint.com/java/java_files_io.htm			
		2				46	45 min	**Input/Output: Exploring java.io** The Character Streams 1. Char Array Reader 2. Char Array Writer 3. Buffered Reader	Black Board					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.	https://www.tutorialspoint.com/java/java_files_io.htm			

	2				47	45 min	**Input/Output: Exploring java.io** The Character Streams 1. Buffered Writer 2. Push back Reader 3. Print Writer	Black Board					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.				
JAVA DATABASE CONNECTIVITY	1				48	45 min	Database connectivity	Black Board/ PPT					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.				
	1				49	45 min	JDBC architecture	Black Board					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.				
	1				50	45 min	JDBC Drivers	Black Board /PPT					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.				
	1				51	90 min	**The JDBC API** loading a driver connecting to a database	Black Board					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.				
	1				52	90 min	Creating and executing JDBC statements	Black Board /PPT					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.				
	1				53	45 min	Handling SQL exceptions	Black Board					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.				
	1				54	90 min	**Accessing result sets** Types of result sets Methods of result set interface	Black Board					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.				
	1				55	45 min	An example JDBC application to query a database.	Black Board /PPT					1. The complete reference Java - 2: V Edition by Herbert Schildt Pub. TMH 2. SAMS teach yourself Java -2: 3rd Edition by Rogers Cedenhead and Leura Lemay Pub.				

Mentor's Signature

Vertical Head Signature

SACRED HEART COLLEGE, THEVARA

SESSION PLAN					
ACADEMIC YEAR 2018-2019					
PROGRAMME	**:**	**Science**	**DATE**	**:**	**05.11.2018**
SEMESTER	**:**	**4**	**BRANCH**	**:**	**BCA**
SUBJECT CODE AND TITLE	**:**	**U2CRBCA12 – Mobile Web and Application Development**	**CREDIT**	**:**	4
FACULTY NAME	**:**	**SHAILESH S**			
PROGRAMME OUTCOMES (POs)	**:**	**PO1 - Identify requirements and implement mobile solutions.** **PO2 - Promote mobile technology solutions using business communication and marketing skills.** **PO3 - Create effective user interfaces that leverage evolving mobile device capabilities.** **PO4 - Design and develop websites that deploy to different devices and platforms.** **PO5 - Design and develop cross-platform applications built with rich-media and HTML-based technologies.** **PO6 - Design and develop device-specific, native applications.** **PO7 – Ability to understand and analyze mobile devices and apps used in it**			

S. No	Topic	No of Session(s) Required	Value additions	POs
MODULE 1 **Mobile Application Principles**				
1	Mobile Application Development Paradigm	1	Assignment on Different Mobile operating systems	PO1 PO7
2	What is Application	1		PO1 PO7
3	Mobile Application	2		PO1 PO7

4	Programming Rules and Challenges	2		PO1 PO7
5	Mobile Programming Tools	2		PO1 PO2 PO7
6	Mobile Application Evolution	2		PO1 PO2 PO7
7	Thin Client and Fat client	2		PO1 PO2 PO7
8	Future of Mobile App Development	2	Class Test	PO1 PO2 PO7
MODULE 2 **Mobile Programming Languages and Practices**				
9	Mobile App Programming in Java	2	Group Discussion on Mobile Programming Languages	PO6 PO7 PO1
10	Introduction to Java and its working mechanism	1		PO6 PO7 PO1
11	Programming Methodology	1		PO6 PO7 PO1
12	Mobile App Programming in C++	2		PO6 PO7 PO1
13	Introduction to C++ and VC++	2	HAND ON PROGRAMMING SESSION	PO6 PO7 PO1

14	Symbian C++	2		PO6 PO7 PO1
15	Mobile Programming Best Practices	2		PO6 PO7 PO1
16	User & Organizational analysis	2		PO1 PO6 PO7 PO2
MODULE 3 Mobile Platform and NW Environment				
17	Mobile App Testing Environment	2	GUEST LECTURE	PO1 PO7 PO3
18	OTA App Provisioning	2		PO1 PO7 PO3 PO4
19	Mobile and web Applications	2		PO1 PO7 PO3
20	Context of Mobile Applications and its Pros and cons	2		PO1 PO7 PO3
21	SIM based Mobile App Development	2	QUIZ	PO1 PO7 PO4 PO3

22	SIM- a Platform and a service differentiator	2		PO1 PO7 PO4 PO3
23	UI Principle and its development	2		PO3
	MODULE 4 **Architecture**			
24	World Wide Web- Application and its Architecture	1	HTML REFRESHING ASSIGNMENT	PO5
25	Web Server and its Feature	2		PO5
26	Web Application Server	1		PO5
27	Web Technologies and Standards i. HTTP ii. HTML	2		PO5
28	Web Technologies and Standards i. HTML Tags ii. CSS	2		PO5
29	Web Technologies and Standards i. XML	1		PO5
30	Introduction to Cookies	1		PO5
31	Dynamic Web Pages i. CGI Script ii. Java Script	2	HANDS ON WORKSHOP ON CGISCRIPT and JAVASCRIPT	PO5
32	Dynamic Web Pages i. Java Script Feature	1		PO5
33	Java Servlets and web Component	1		PO5
34	J2EE and MVC Framework i. PHP ii. AJAX	2	HANDS ON WORKSHOP ON PHP and AJAX	PO5

35	J2EE and MVC Framework i. AJAX Standards	1		PO5
	MODULE 5 **Web Architecture, Standards and Tools**			
36	Mobile Web Browser and internet access	1		PO5
37	Mobile Web Standards and Development Time	1		PO5
38	WAP and Dynamic Web Script i. XHTML, ii. WML	2	DEBATE on XHTML vs WML	PO5
39	WAP and Dynamic Web Script i. WML Script	1		PO5
40	Mobile Web Development Approaches	1		PO5 PO4 PO7
41	Content Adaption and Adaption Strategies	1		PO5 PO4 PO7
42	How to Recognize End User device	1		PO5 PO4 PO7
43	Device detection in PHP	2	DEVICE DETECTION USING PHP	PO5 PO4 PO7
44	Tools Available for Mobile Web Development i. Conversion Engines ii. Emulators	2	FAMILIARIZING PHONEGAP and CORDDOVA	PO5 PO4 PO7

45	Tools Available for Mobile Web Development i. Mobile Web Checkers	2	CLASS TEST	PO5 PO4 PO7

TEXTBOOKS/REFERENCES

1. Professional Mobile Application Development by Jeff McWherter, Scott Gowell, 2012
2. Mobile Computing Principles: Designing and Developing Mobile Applications by Reza B'Far, Cambridge University, 2005
3. Mobile Applications: Architecture, Design, and Development by Valentino Lee, Heather Schneider and Robbie Schell, Pearson Education, 2004

COURSE ASSIGNMENTS: In addition to readings for each class and participation in class discussions and activities, there are three assignments for this course:

Details on OTHER ACTIVITIES: Paralleling the objectives of the course, these include:
Readings are listed on the syllabus for the date due. They are listed as required and recommended to assist students in prioritizing their workload. Some weeks have *hefty* reading assignments, and students will want to plan ahead to manage their workloads. Required means just that. All required readings are from the two texts. Handouts will be provided by the instructor.
Study questions will be provided for each class to assist students in reflecting of readings and preparing adequately for class discussions. ***Study groups are highly recommended to improve class participation and learning***.
Attendance and participation. As a skills-development course, attendance and participation are essential to learning. Attendance, preparation, and participation are expected for each class. Class participation will be graded, based on the criteria listed below.

GRADING: Grades will be determined as follows: (1) change agent credo and presentation: 25% of CIA 1 ; (2) change agent interview and reflection: 25% of CIA 2 (3) group consulting report and reflection 50 % of final marks (4) class participation will be given marks –case discussions, quiz and managerial games (25% for every entry in CIA)

Papers and assignments are due by class time on the dates listed on the syllabus (with the exception of the final paper which is due by noon). **Late papers will be lowered one full letter grade for the first day of lateness. Papers more than one week late will constitute an automatic failure.** Exceptions are possible only for serious reasons and only with prior instructor approval. **NO EXCEPTIONS**. Organization, time management, and responsible follow-through are important professional skills.

Criteria for determining class participation grades are the following:
(1) *quality*: responses that reflect deep and accurate understanding of materials and contribute to class learning
(2) *quantity*: active involvement in discussions and activities in each class throughout the term
(3) *integrativeness*: responses that: (a) enable others to see the relevance of issues to course goals; and (b) demonstrate abilities to integrate learnings from past discussions, activities, readings, or course
Criteria for grading written papers include:
(1) depth of demonstrated learning
(2) number, strength, and accurate use of references to relevant literature
(3) abilities to integrate accurately and deeply theories and ideas from course discussions and readings
(4) clarity, quality, and organization of writing and analysis.
(5) quality and quantity of learning about your own approach(es) to change management

Faculty Signature **CEO Signature**

SESSION PLAN					
ACADEMIC YEAR 2018-2019					
PROGRAMME	**:**	**BCA**	**DATE**	**:**	**05.11.2018**
SEMESTER	**:**	**IV**	**BRANCH**	**:**	Computer Science,Core
SUBJECT CODE AND TITLE	**:**	**Introduction to Cloud Technology**	**CREDIT**	**:**	**4**
FACULTY NAME	**:**	**Mrs. Christy Jacqueline**			
PROGRAMME OUTCOMES (POs)	**:**	**PO1** - Ability to expose the students to various concepts of Cloud Computing. **PO2-** Ability to provide a brief overview of technical aspects along with business commercial perspectives. **P03**-Ability to understand the examples and case studies of popular cloud based application in the market as per the requirements. **PO4-** Ability to different methodologies, server architecture, governance, principles and applications.			

S. No	Topic	No of Session(s) Required	Value additions	POs
UNIT -1 CLOUD COMPUTING CONCEPTS				
1	Introduction and Class Overview	3		PO1 PO2 PO3
2	Cloud Computing Concepts Learning Outcome: Discuss the basics of Cloud Computing?	4	**Reading :** Cloud Computing Bible -Barrie Sosinsky - Wiley	PO1 PO2

3	Cloud Computing Concepts Learning Outcome: ➔ Discuss about the history and evolution of Cloud Computing?	4	**Reading:** Cloud Computing Bible -Barrie Sosinsky -Wiley Study	PO1, PO3 PO5
4	Cloud Computing Concepts: Learning Outcome: ➔ Discuss about the history and evolution of Cloud Computing? ➔ To classify and differentiate the types of Cloud computing?	3	**Reading:** Cloud Computing Bible - Barrie Sosinsky - Wiley Study	PO1 PO3 PO5
5	Cloud Computing Concepts: Learning Outcome: ➔ List the major benefits of Cloud Computing?	3	Quiz	PO1 PO3 PO4
6	Cloud Computing Delivery Models Learning Outcome: ➔ To know the various cloud computing services ➔ Understand and evaluate the importance of cloud computing services	3		PO1 PO4
UNIT -2 MIGRATING TO CLOUD				
8	Migrating to Cloud Learning Outcome: ➔ Discuss about web-based business services ➔ Explain about the real time business scenarios	4		PO2 PO3

9	Migrating to Cloud Learning Outcome: ➔ Discuss about the approached involved in process of cloud migration ➔ Summarize the approaches followed in cloud migration process?	5		PO4
10	Migrating to Cloud Learning Outcome: ➔ Discuss in detail about the seven steps involved in cloud migration? ➔ Identify and understand the process involved in each step	4	Quiz	PO3 PO4
UNIT -3 RISK MANAGEMENT IN CLOUD COMPUTING				
11	Risk Management in Cloud computing Learning Outcome: ➔ To Describe the process and measuring and assessing the risks in cloud computing ➔ To choose the form of cloud computing to use	3		PO2 PO3
12	Risk Management in Cloud Computing Learning Outcome: ➔ To discuss about the major concerns involved in adopting cloud computing by an Organization. ➔ To know various risk mitigation methodology ➔ To know about the application of risk mitigation methodologies in real life scenarios of a particular enterprise.	2	Group Discussion	PO3 PO4
13	Assessing the cloud Learning Outcome: ➔ To know about the process of software evaluation ➔ Discuss system testing process	2		PO2 PO4
14	Assessing the cloud Learning Outcome:	3	Seminar	PO1 PO4

	➔ Describe about the cost cutting ➔ Explain the suitable measures to control cost cutting ➔ Explain the effective approach in upscaling or downsizing the cloud			
15	Assessing the cloud Learning Outcome: ➔ To analyse the right scalable option for cost management in cloud	4	Seminar	PO3 PO4
UNIT -4 SELECTING THE CLOUD PROVIDER				
16	Selecting the Cloud Provider Learning Outcome: ➔ Discuss various selection criteria of cloud providers ➔ To build awareness about best practices in selecting cloud providers ➔ Describe various standards for selecting cloud providers ➔	4		PO2 PO3
17	Selecting the cloud provider Learning Outcome: ➔ Summarise various standards for selecting cloud providers ➔ Discuss about the practical issues in cloud computing	4		PO2 PO4
18	Selecting the cloud provider Learning Outcome: ➔ Outline the business and commercial considerations while selecting cloud providers ➔ Explain the significance of business and commercial considerations in selecting cloud providers	2		PO2 PO3 PO4
UNIT -5 GOVERNANCE IN CLOUD				
19	Governance in Cloud: Learning Outcome: ➔ Discuss how cloud computing standard organization and groups	1		PO5

	ensure that different providers are able to work together ➔ To know the various standard organization and groups that focus on 2addressing standard issues in regard to the cloud environment			
20	Governance in Cloud Learning Outcome: ➔ Describe the significance of IT governance in Cloud Computing ➔ Discuss the various solutions available for cloud governance ➔ To describe the various cloud governance solutions available	2		PO4 PO5
21	Legal Issues in Cloud computing Learning Outcome: ➔ Discuss data privacy and data security as a critical concern of cloud computing? ➔ To define the measures involves in data privacy and data security ➔ To describe the key provision for cloud computing contracts	3		PO3 PO5
22	Legal Issues in Cloud computing Learning Outcome: ➔ To know the legal consideration of cloud computing in various business cases ➔ To summarize the legal risk and considerations in cloud	2		PO4 PO3
23	Cloud Practices Learning Outcome: ➔ Discuss all the possible best practices that need to be considered while migrating to cloud	2		PO3 PO4
24	Cloud Practices Learning Outcome:	3		PO4

	Discuss all the possible best practices that need to be considered while migrating to cloud			
25	Cloud practices Learning Outcome ➔ List top four practices to be followed during cloud migration	2		PO3 PO4
26	Cloud Practices Learning Outcome: Explain the best practices to avoid migration in Cloud computing	1		PO1 PO3
27	Revision and Seminar	1		
29	Revision and Seminar	5	Viva	

TEXTBOOKS	REFERENCES
1. Cloud Computing: Principles and Paradigms, Rajkumar Buyya, James Broberg, Andrzej M. Goscinski,, John Wiley and Sons Publications, 2011 2. Brief Guide to Cloud Computing, Christopher Barnett, Constable & Robinson Limited, 2010	**1.** Handbook on Cloud Computing, Borivoje Furht, Armando Escalante, Springer, 2010 2. Cloud Computing Theory and Practice, Dan C Marinescu, Elsevier, 2013 3. Cloud Computing for Dummies, Judith Hurwitz, Robin Bloor, Marcia Kaufman & Fern Halper, Wiley Publishing, 2010

COURSE ASSIGNMENTS: In addition to class discussions and other activities, there are two assignments and one seminar/viva for this course:

- ***Assignment 1:***

➔ To understand different service models in Cloud computing

➔ Case studies in Cloud Computing

- ***Assignment 2:***

➔ Comparing different cloud computing technologies

- ***Seminar / Viva:***

  Specific topics will be allocated for both viva or seminar.

Each student will present a **topic relevant to Cloud computing**:

1) PART I: A presentation of the allocated topic is conducted

(2) PART II: Viva session for the presentation

(3) PART III: Report on the topic should be submitted

Faculty Signature

SESSION PLAN					
ACADEMIC YEAR 2018-2019					
PROGRAMME	**:**	**BCA**	**DATE**	**:**	**07.11.2018**
SEMESTER	**:**	**4**	**BRANCH**	**:**	**BSc.Computer Applications**
SUBJECT CODE AND TITLE	**:**	**19U4VCBCA2 Fundamentals of Data Centre**	**CREDIT**	**:**	**4**
FACULTY NAME	**:**	**Mrs. NEETHU THOMAS**			
PROGRAMME OUTCOMES(POs)		**PO1:** To introduce the fundamental concepts and principles of Data Centre**.** **PO2:** Ability to learn the Roles of Data Centers in the Enterprise and in the Service Provider Environment, **PO3**: To learn the different models of Data Centre. **PO4**: Ability to learn the Data Centre Architecture. **PO5**: To gain knowledge on Cloud Data Centre networking Topologies. **PO6**: To know the Data Center Network Switch Types. **PO7**: To emphasize the Data Center Networking Standards. **PO8**: To focus on Data Centre bridging **PO9**: Ability to pursue Server Virtualization and Networking and its Protocols. **PO10**: Ability to explore Storage Networks and Network Convergence. **PO11**: Ability to apply SDN.			

Module 1 **Overview of Data Centers**				
S. No	**Topic**	**No of Session(s) Required**	**Value additions**	**POs**
1	Syllabus discussion and Introduction to Data Centre	1		PO1
2	Data Center Goals and Data Center Facilities	1	**Assignment** Data Centre and its Facilities	PO1
3	Roles of Data Centers in the Enterprise	1		PO2
4	Roles of Data Centers in the Service Provider Environment	2		PO3
5	Application Architecture Models	1		PO4
6	The Client/Server Model and Its Evolution	2		PO4
7	The n-Tier Model	1		PO4
8	Multitier Architecture Application Environment,	2		PO4
9	Data Center Architecture.	2		PO4
10	Types of System Calls	2		PO4
11	Revision – Module I	1		
12	Introduction to Cloud Data Center , and Networking Topologies,	3	**Seminar** Cloud Network topologies	PO5

13	Traditional Multi-tiered Enterprise Networks	2		PO5
14	Data Center Network Switch Types	1		PO6
15	**CIA I**			
16	Flat Data Center Networks	1		PO6
17	Rack Scale Architectures	2		PO5 PO6
18	Network Function Virtualization.	2	**Reading** Network virtualization	PO6
19	Ethernet Data Rate Standards	2		PO7
20	Virtual Local Area Networks	2		PO7
21	Data Center Bridging	1		PO8
22	Improving Network Bandwidth- Remote Direct Memory Access.	2		PO8
23	Revision – Module II	1		
	Module 3 **Server Virtualization and Networking**			
24	Server Virtualization and Networking	2	**Assignment** I/O virtualization and its uses in network	PO9
25	VM Overview and Virtual Switching	2		PO9
26	PCI Express	2		PO9
27	Edge Virtual Bridging	2		PO9

28	VM Migration	2		PO9
29	Multi-tenant Environments	1		PO9
30	Traditional network Tunneling	1		PO9
31	Protocols- VXLAN- NVGRE	3		PO9
32	Tunnel Locations	1		PO9
33	Load Balancing	1		PO9
34	Revision – Module III	1		
35	**CIA II**	2		
	Module 4 **Storage Networks**			
36	Storage Background and Advanced Storage Technologies	2		PO10
37	Storage Communication Protocols	2		PO10
38	Network Convergence	1		PO10
39	Software Defined Storage	1		PO10
40	Storage in Cloud Data centers.	1		PO10
41	Revision – Module IV	1		
	Module 5 **Software Defined Networking**			
42	Introduction to SDN	1		PO11
43	Data Center Software Background	1		PO11
44	OpenStack and OpenFlow	1		PO11
45	Network Function Virtualization	2		PO11
46	SDN Deployment	2		PO11

47	Revision – Module V	1		

Details on OTHER ACTIVITIES: Paralleling the objectives of the course, these include:

Readings are listed on the syllabus for the date due. They are listed as required and recommended to assist students in prioritizing their workload. Some weeks have *hefty* reading assignments, and students will want to plan ahead to manage their workloads. Required means just that. All required readings are from the two texts. Handouts will be provided by the instructor.

Study questions will be provided for each class to assist students in reflecting of readings and preparing adequately for class discussions. ***Study groups are highly recommended to improve class participation and learning***.

Attendance and participation. As a skills-development course, attendance and participation are essential to learning. Attendance, preparation, and participation are expected for each class. Class participation will be graded, based on the criteria listed below.

GRADING: Grades will be determined as follows: (1) change agent credo and presentation: 25% of CIA 1 ; (2) change agent interview and reflection: 25% of CIA 2 (3) group consulting report and reflection 50 % of final marks (4) class participation will be given marks –case discussions, quiz and managerial games (25% for every entry in CIA)

Papers and assignments are due by class time on the dates listed on the syllabus (with the exception of the final paper which is due by noon). **Late papers will be lowered one full letter grade for the first day of lateness. Papers more than one week late will constitute an automatic failure.** Exceptions are possible only for serious reasons and only with prior instructor approval. **NO EXCEPTIONS**. Organization, time management, and responsible follow-through are important professional skills.

Criteria for determining class participation grades are the following:

(1) *quality*: responses that reflect deep and accurate understanding of materials and contribute to class learning

(2) *quantity*: active involvement in discussions and activities in each class throughout the term

(3) *integrativeness*: responses that: (a) enable others to see the relevance of issues to course goals; and (b) demonstrate abilities to integrate learnings from past discussions, activities, readings, or course

Criteria for grading written papers include:

(1) depth of demonstrated learning

(2) number, strength, and accurate use of references to relevant literature

(3) abilities to integrate accurately and deeply theories and ideas from course discussions and readings

(4) clarity, quality, and organization of writing and analysis.

(5) quality and quantity of learning about your own approach(es) to change management

SESSION PLANs					
ACADEMIC YEAR 2018-2019					
PROGRAMME	**:**	**COMPUTER SCIENCE**	**DATE**	**:**	**05.11.2018**
SEMESTER	**:**	**4**	**BRANCH**	**:**	**BCA**
SUBJECT CODE AND TITLE	**:**	**19U4CRBCA13 Basic Android**	**CREDIT**	**:**	**4**
FACULTY NAME	**:**	**NEETHU A S**			
PROGRAMME OUTCOMES (POs)	**:**	**PO1** - Ability to describe Android Architecture, Android SDK, Android versions, Application components, Intent and Intent filters **PO2-** Ability to design user interface using views, layouts, fragments in Android platform **PO3**.-Ability to use shared preferences, Internal storage, external storage, SQLite database, Content Providers, **PO4-** To equip students to use Media API, Video, Audio and Camera, Sensors, Bluetooth in Android applications **PO5**-Ability to use maps and location based services **PO6**-To equip students with the basics of testing android applications			

Sl No	Topic	Number of sessions required	Value additions	POs
Module 1: Introduction to Android				
1	Module 1: Introduction to Android	1	Lecturing Using Slides	PO1
2	Android components and features	1	Lecturing Using Slides	PO1
3	Android architecture	1	Lecturing Using Slides	PO1
4	Introduction to Android SDK	1	Lecturing Using Slides	PO1
5	Components of Android	1	Lecturing Using Slides	PO1

	Application			
6	Creating the Activity	1	Demonstration with Example program	PO1
7	Exploring the Activity Lifecycle	1	Lecturing Using Slides	PO1
8	XML vs Programmatic Layouts	1	Lecturing Using Slides	PO1
9	Android Manifest File	1	Lecturing Using Slides	PO1
10	Intent and types Intent Filter	1	Lecturing Using Slides	PO1
11	Services	1	Demonstration with Example program	PO1
12	Content Providers	1	Lecturing Using Slides	PO1
13	Broadcast Receiver	1	Demonstration with Example program	PO1
Module 2: View, Event handling and listeners				
14	View, Event handling and listeners Introduction	1	Lecturing Using Slides	PO2
15	Layouts	1	Demonstration with Example program	PO2
16	Adapters	1	Lecturing Using Slides	PO2
17	Menu	1	Lecturing Using Slides	PO2
18	Action bar	1	Lecturing Using Slides	PO2
19	Notification- notification with alarms	1	Demonstration with Example program	PO2
20	Alert Dialog	1	Lecturing Using Slides	PO2
21	CIA – I			
22	Designing for Tablets	1	Lecturing Using Slides	PO2
23	Resources and Assets	1	Lecturing Using Slides	PO2
24	Localization – testing and publishing localized applications	1	Lecturing Using Slides	PO2

25	Fragments and Fragment lifecycle	1	Demonstration with Example program	PO2
Module 3: Data storage				
26	Data storage Introduction	1	Lecturing Using Slides	PO3
27	Data Storage using shared preferences	1	Lecturing Using Slides	PO3
28	Data Storage using File system	1	Lecturing Using Slides	PO3
29	Building and accessing a database	1	Demonstration with Example program	PO3
30	Networking	1	Lecturing Using Slides	PO3
31	Content Provider	1	Demonstration with Example program	PO3
32	Using Built in Content provider	1	Lecturing Using Slides	PO3
	Creating a Content Provider	1	Lecturing Using Slides	PO3
33	Content Provider CRUD operations	1	Lecturing Using Slides	PO3
34	Evaluation of the CIA-I	1	Lecturing Using Slides	PO3
Module 4: Android Media Playing Audio				
35	Android Media Playing Audio Introduction	1	Lecturing Using Slides	PO4
36	Playing video	1	Lecturing Using Slides	PO4
37	Capturing media- audio capture	1	Lecturing Using Slides	PO4
38	Recording video	1	Lecturing Using Slides	PO4
39	Sensors	1	Lecturing Using Slides	PO4
40	Exploring Android Bluetooth capabilities	1	Lecturing Using Slides	PO4

41	Maps and Location: Android communication	1	Demonstration with Example program	PO5
42	Using Location manager and Location provider	1	Lecturing Using Slides	PO5
43	Location based services	1	Lecturing Using Slides	PO5
44	Map based activities –to find Map API Key	1	Demonstration	PO5
45	Maps via Intent and Map Activity	1	Lecturing Using Slides	PO5
46	Location Updates	1	Lecturing Using Slides	PO5
Module 5: Basics of testing				
47	Module 5: Basics of testing	1	Lecturing Using Slides	PO6
48	Activity testing	1	Lecturing Using Slides	PO6
49	Service testing	1	Lecturing Using Slides	PO6
50	Content provider testing	1	Lecturing Using Slides	PO6
51	Test classes	1	Lecturing Using Slides	PO6
52	Commercializing Applications: DDMS overview	1	Lecturing Using Slides	PO6
53	Running and Debugging using DDMS	2	Demonstration	PO6
54	Debugging using DDMS	1	Lecturing Using Slides	PO6
55	Publishing your application	1	Lecturing Using Slides	PO6
56	REVISION	1	Assignment -Example program	PO1
57	REVISION	1	Assignment -Example program	PO2
58	REVISION	1	Assignment -Example program	PO3
59	REVISION	1	Assignment -Example program	PO4
60	REVISION	1	Assignment -Example program	PO5
61	CIA II	1	2 HOURS	

62	REVISION	1		
63	REVISION	1		
64	REVISION	1		
65	REVISION	1		
66	REVISION	1		
67	REVISION	1		
68	REVISION	1		
69	REVISION	1		
70	REVISION	1		
71	REVISION	1		
72	REVISION	1		
73	REVISION	1		
74	REVISION	1		
75	Evaluation of the Course	1		

TEXTBOOKS	**REFERENCES**
1. Professional Android 4 Development by Reto Meier, John Wiley and Sons, 2012 2. Beginning Android Programming with Android Studio, 4ed, by J. F. DiMarzio, 2016	1. Android in Action, Third Edition, by W. Frank Ableson, RobiSen, Chris King, C. Enrique Ortiz, 2012 2. Android Application Development Cookbook, by Wei-Meng Lee, John Wiley and Sons, 2013 3. Beginning Android 4, by Grant Allen, Apress, 2011

COURSE ASSIGNMENTS: In addition to readings for each class and participation in class discussions and activities, these are the assignments for this course:

1. Create an android application to display “Hello World”.
2. Create an android application to implement a simple calculator.
3. Create an android application unit converter to convert height from cm to inch and vice-versa, also to convert weight from kg to pound and vice-versa (use radio button and button group).
4. Create an android application which shows Weekly Timetable of 2nd & 4th semester (Use Table view and toggle button to switch between semesters);
5. Create an android application to list all semester of BCA course and on selecting a semester list all subject in that semester on another activity.
6. Create a simple quiz application “SMART QUIZ” for 3 core subjects in Computer science (Programming, Operating System, Database). Each subject should contain minimum of 5 questions score should be displayed after the quiz. (Use Spinner for selecting subject).
7. Create an android application to draw primitive shapes square and circle by taping on the canvas. Provide options to fill the shape with a selected color and use slider to change the size.
8. Create a TIC – TAC – TOE game as an android application (use Grid Layout).
9. Create a user login form and registration form. First time users have to register through the registration form and the details should be stored in the database. Then they can login using the login page.
10. Create a camera application, where you can click a picture and then save it as the wallpaper
11. Create a media player which plays an mp3 song.
12. Create an application to pin your current location in google maps.

13. Create an application to create custom list view to show name, phone number of some persons along with a call button and the app should make call to particular person when the call button is tapped.

GRADING: Grades will be determined as follows: (1) presentation: 5 marks of CIA ; (2) assignment: 5 marks of CIA (3) CIA 1: 5 marks of CIA (4) CIA 2 : 5 marks of CIA (5) Class Attendance: 5 marks of CIA

Faculty Signature **HOD Signature**

SESSION PLAN					
ACADEMIC YEAR 2018-2019					
PROGRAMME	**:**	**SCIENCE**	**DATE**	**:**	**05.11.2018**
SEMESTER	**:**	**4**	**BRANCH**	**:**	**BCA**
SUBJECT CODE AND TITLE	**:**	**U4CRBCA14 MOBILE DEVICE AND NETWORK ARCHITECTURE**	**CREDIT**	**:**	**4**
FACULTY NAME	**:**	**Mr. SANTHOSH KUMAR K P**			

COURSE OBJECTIVES:

The objective of the course is to present an introduction to mobile devices and their network architecture, with an emphasis on the mobile device hardware, architecture and the protocols associated with its operation.

COURSE OUTCOMES:

Course Outcomes: After completing this course successfully, the students will be able to:	
CO 1	Understand the basic wireless communication principles and the wireless networks
CO 2	Explain the basic concepts of cellular networks.
CO 3	Explain the concepts of mobile handover with in the cellular network.
CO 4	Illustrate the concepts of GSM, 2G, mobile IP and UMTS
CO 5	Explain the features of a mobile device.
CO 6	Illustrate the hardware components of mobile devices.

SL NO:	Topic to be covered	No of Session(s) Required	Value additions	CO's
Module 1: Communication Principles				
1	Wireless Communication Principles	1		CO 1
2	Radio Communication	1		CO 1
3	Analog and Digital Communication, Benefits of Digital Signals	1		CO 1
4	Computer Network, OSI Model	1		CO 1
5	Mobile Network, OSI layer functions, Mobile Network Protocol Layers	1		CO 1
6	Introduction to Basic Telephony, POTS	1		CO 1
7	Telephony Networks, PSTN	1		CO 1
8	Telephone Network Hierarchy	1		CO 1
9	Telecommunication Networks	1		CO 1
10	Fixed Networks	1		CO 1
11	Mobile Networks	1		CO 1
12	revision module 1	1		CO 1
Module 2: Mobile Cellular Networks				
13	Cellular Network Concepts, Cells and Base Stations	1		CO 2
14	Frequency and Interface in Cells, access channel	1		CO 2
15	Mobile Network Architecture	1		CO 2
16	Mobile Network Subsystems, Mobile Station, Base Station Subsystems	1		CO 2
17	Network Switching Subsystems	1		CO 2
18	Mobile Network, Protocol Stacks, Core Networks, PLMN	1		CO 2
19	Mobile Network Fundamentals, Mobile Network Features	1		CO 2
20	CIA I	1		1 hr test
21	Mobility, Registration, Handoff, Roaming	1		CO 3
22	Mobile Network Fundamentals (SMS), SMS	1		CO 3
23	SMS Network Architecture, SMS Network Elements	1		CO 3

24	SMS Protocols, SMS Applications & Short Codes	1		CO 3
Module 3: GSM and CDMA Networks:				
25	GSM History, GSM RF Channels	1		CO 4
26	2G Network Architecture	1		CO4
27	GSM Protocol Stack, GPRS Standards, CS and PS Domains	1		CO 4
28	GPRS Architecture, GPRS Network Architecture	1		CO 4
29	GPRS protocol	1		CO 4
30	CDMA Evolution, 2G CDMAOne, CDMA 2G Standards	1		CO 4
31	3GPP2 Network	1		CO 4
32	Mobile IP, UMTS Spectrum	1		CO 4
33	UMTS Radio Access Network, UMTS Protocol stack	1		CO 4
34	SIP Network, UMTS Multiple Access Network Architecture	1		CO 4
35	4G	1		CO 4
36	revision module 3	1		CO 4
Module 4: Handset Evolution, Handset Characteristics and Features				
37	Mobile Phone and Network Evolution	1		CO 5
38	Cellular Networks, Cell Phones	1		CO 5
39	Mobile Phones, Mobile Handset Characteristics	1		CO 5
40	CIA II	2		2 hrs test
41	Wireless Cellular, Bluetooth	1		CO 5
42	Display, Keypad, Camera	1		CO 5
43	Handset Categories	1		CO 5
44	Low end Phones, Feature Phones, Smart phones	1		CO 5
45	Handset Components	1		CO 5
46	Handset Design	1		CO 5
47	Handset Manufacture, Handset Bill of Materials, assembling handsets.	1		CO 5
48	Revision module 4	1		CO 5
Module 5: Hardware Architecture and Subsystems				

49	Handset hardware architecture	1		CO 6
50	Primary Hardware Subsystems, Element inside a Mobile	1		CO 6
51	Hardware Architecture Evolution	1		CO 6
52	Processing Subsystem architecture	1		CO 6
53	CPU and Memory, Memory, Internal storage	1		CO 6
54	Introduction to the Radio subsystems, Function of the RF Subsystems	1		CO 6
55	Handset Power requirement	1		CO 6
56	Power Management, Power reduction techniques	1		CO 6
57	Introduction and Definition to the SIM	1		CO 6
58	Smartcards in general and concept of mobile identity	1		CO 6
59	Functions and usage of the SIM , Phones without SIMs	1		CO 6
60	Revision module 5	1		CO 6

TEXT BOOKS:

1. Wireless and Mobile Network Architectures by Yi-Bang Lin and Imrich Chlamtac, Wiley-India, 2008
2. Mobile Networks Architecture by Andre Perez, Wiley, March 2012
3. Mobile Computing – Technology, Application & Service Creation by Asoke. K Talukder, Roopa R. Yavagal, Asoke K. Talukder, Tata McGraw-Hill, 2005
4. GSM - Architecture, Protocols and Services by Jörg Eberspächer, Hans-JoergVögel, Christian Bettstetter, Christian Hartmann John Wiley & Sons, Dec-2008

ASSIGNMENTS/EXERCISES – Details & Guidelines

	Date of submission/ completion	**Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)**	**Weighttage**	**CO**
1	03/10/2018	Individual assignment on separate topics	5	CO 1, CO 4, CO 5
2	03/10/2018	Seminar	5	CO 1, CO 4, CO 5

SACRED HEART COLLEGE(AUTONOMOUS), THEVARA

DEPARTMENT OF COMPUTER SCIENCE

COURSE PLAN

ACADEMIC YEAR 2018-2019

PROGRAMME	**BCA (SPECIALISATION IN MOBILE APPLICATIONS AND CLOUD TECHNOLOGY)**	**SEMESTER**	5
COURSE CODE AND TITLE	**U5VCBCA3, Principles of Virtualization**	**CREDIT**	**4**
HOURS/SEM	**4**		
FACULTY NAME	**Mrs.Christy Jacqueline**		

PROGRAMME SPECIFIC OUTCOMES(PSOs)

1	Apply the theoretical foundations of computer science in modelling and developing solutions to the complex and real world problems.
2	Comprehend, explore and build up computer programs, applications in the allied areas like Algorithms, Multimedia, Web Design and android applications for efficient design of computer-based systems that meet the needs of industry and society.
3	Develop skills in android and cloud technology development so as to enable the graduates to take up employment/self-employment in global technical market.
4	Apply knowledge of layered network models, protocols, technologies, topologies and security policies for building network and internet based applications.

COURSE OUTCOMES (COs)

1	To understand the basics of Virtualization
2	To deploy and manage an Enterprise Desktop Virtualization Environment and presentation virtualization Environment
3	To deploy and manage the presentationVirtualization Environment
4	To understand the Virtualization Software

MODULE I					
Sl.No	**Session**	**Topic**	**Method of Teaching**	**Value Additions**	**COURSE OUTCOMES**
1	1	Understanding Virtualization	PPT		CO1
2	2	Need of Virtualization	PPT		CO1
3	3	Virtualization Technologies- Server Virtualization	PPT		CO1,CO4
4	4	Storage Virtualization	PPT		CO1,CO2
5	5	I/O Virtualization	PPT		CO2
6	6	Network Virtualization	PPT		CO2
7	7	Client Virtualization	PPT		CO2
8		Application Virtualization	PPT		CO2
9		Understanding Virtualization uses- Sever consolidation, development and testing, disaster recovery	PPT	VIDEO LECTURES	CO1,CO2
MODULE II					
10		Configure the BIOS to support hardware Virtualization	PPT		CO2
11		Install and configure Windows Virtual PC	PPT		CO2
12		Installing Windows virtual PC on various platforms	PPT		CO2
13		Creating and Managing virtual hard disks	PPT		CO2
14		Configuring virtual machine resources including network resources	PPT		CO2
15		Prepare host machines- create, deploy and maintain images	PPT	VIDEO LECTURES	CO2
MODULE III					
16		Prepare and manage remote applciations	PPT		CO3
17		Package application for deployment by using RemoteApp	PPT		CO3
18		Installing and configuring the RD session Host Role service on the server	PPT		CO3
19		Access published applications	PPT		CO3
20		Configuring Remote Desktop Web Access and client connections	PPT		CO3
21		Configuring role based application provisioning	PPT		CO3
22		Configuring Remote Desktop	PPT		CO3
23		Configuring Remote Desktop Web Access client connections	PPT		CO3
MODULE IV					
24		List of Virtulisation Software available	PPT		CO4
25		VmWare- Introduction to Vsphere	PPT		CO4
26		Introduction to Hyper-V	PPT		CO4
27		Introduction to Citrix XENDesktop fundamentals	PPT		CO4

ASSIGNMENTS AND SEMINARS

Sl No	**Module**	**Topic**	**Nature of Assign**
1	I	virtualization Technologies	Handwritten
2	II	Hypervisor	Handwritten
3	III	Citrix XENDesktop fundamenals	Handwritten

TEXTBOOKS AND REFERENCES

1	ft virtual server 2005 by Twan Grotenhuis, rogier Dittner, Aaron Tiensivu, Ken Majors,Geoffrey Green, David Rule, Andy Jones, Mattahijs Ten Selda
2	Vitualisation, the complete cornerstone guide to Virtualization best practices, Ivanka Menken, Gerard Blokdijk, Lightning Source Incorporated,2008
3	

SACRED HEART COLLEGE(AUTONOMOUS), THEVARA

DEPARTMENT OF COMPUTER SCIENCE

COURSE PLAN

ACADEMIC YEAR 2018-2019

PROGRAMME	BACHELOR OF COMPUTER APPLICATIONS [MOBILE APPLICATIONS AND CLOUD TECHNOLOGY]	**SEMESTER**	5
COURSE CODE AND TITLE	U5VCBCA4 Server Operating System	**CREDIT**	4
HOURS/WEEK	4	**HOURS/SEM**	60
FACULTY NAME	SANTHOSH KUMAR K P		

COURSE OBJECTIVES:	
1	Installing and Configuring Windows Server 2008
2	Configuring Networking and Network Services
3	apply IPv4 and IPv6 during the configuaration of IP addressing
4	Configuring and Managing Active Directory Domain Services and group policies.

CUM. HOURS	**TOPIC**	**LEARNING RESOURCES**	**NO. OF HOURS**	**VALUE ADDITIONS**	**COURSE OUTCOME**
	MODULE I				
1	History of Server OS, Introduction to windows server 2003 & 2008	PPT/Lecture	1	VIDEOS	CO 1
2	Overview of Windows Server 2008	PPT/Lecture	1		CO 1
4	Installing Windows Server 2008	PPT/Lecture	2		CO 1
6	Managing Server Roles and Features	PPT/Lecture	2		CO 1
8	Configuring and Managing Windows Server 2008 Server Core	PPT/Lecture	2		CO 1
10	Deploying Windows Server 2008	PPT/Lecture	2		CO 1
11	Introduction and Creation of Users accounts	PPT/Lecture	1		CO 1
	MODULE II				
12	Configuring IPv6 Addressing	PPT/Lecture	2	QUIZ	CO 2
14	Migrating from IPv4 to IPv6	PPT/Lecture	2		CO 2
	TEST I				
16	DHCP	PPT/Lecture	1		CO 3
17	DNS	PPT/Lecture	1		CO 3
19	Configuring zones	PPT/Lecture	2		CO 3
21	Configuring DNS server settings	PPT/Lecture	2		CO 3
22	Configuring zone transfer and Replication	PPT/Lecture	1		CO 3
24	Configuring and Managing Windows Firewall with Advanced Security	PPT/Lecture	2		CO 3
	MODULE III				
26	Active Directory Enhancements in Windows Server 2008 and 2008 R2	PPT/Lecture	2		CO 4
28	Installing and Configuring Domain Controllers	PPT/Lecture	2		CO 4

29	Configuring Read-Only Domain Controllers	PPT/Lecture	1		CO 4
32	Configuring Fine-Grained Password Policies, Sites	PPT/Lecture	3		CO 4
33	Global Catalog	PPT/Lecture	1		CO 4
35	Managing Active Directory Objects with Windows PowerShell	PPT/Lecture	2		CO 4
36	Active Directory Database Management	PPT/Lecture	1		CO 4
38	Replication between the Domain Controllers	PPT/Lecture	2		CO 4
TEST II					
MODULE IV					
41	Group Policy Enhancements in Windows Server 2008	PPT/Lecture	2	QUIZ	CO 5
43	Managing Security with Group Policy	PPT/Lecture	2		CO 5
45	Managing Clients with Group Policy Preferences	PPT/Lecture	2		CO 5
46	Server Management in Windows Server 2008	PPT/Lecture	1		CO 5
47	Managing Windows Server with Server Manager	PPT/Lecture	1		CO 5
49	Managing Server Updates by Using WSUS	PPT/Lecture	2		CO 5
51	Managing Backup and Restore by Using Windows Server Backup	PPT/Lecture	2		CO 5
55	Managing Event Logs and Auditing, Performance and Resource Management	PPT/Lecture	4		CO 5
52	Revision		4		
TEXT BOOKS & REFERNCES					
1	mcgraw.hill.microsoft.windows.server.2008.administration.feb.2008				
2	Red hat Linux Administration By Michael Turner and Steve Shah-McGraw-Hill Companies, Inc Publisher, 2010				
3	RHCSA/RHCE Red Hat Linux Certification Study Guide (Exams EX200 & EX300), 6th Edition (Certification Press) [Paperback], Michael Jang, McGraw-Hill Osborne Media; 6				
	TOPIC & NATURE OF ASSIGNMENT (INDIVIDUAL/GROUP – WRITTEN/PRESENTATION)		**DATE OF SUBMISSION**	**MARKS**	**CO**
1	Modeling of various services in server		18-Sep		CO 6

SACRED HEART COLLEGE(AUTONOMOUS), THEVARA

DEPARTMENT OF COMPUTER SCIENCE

COURSE PLAN			
ACADEMIC YEAR 2018-2019			
PROGRAM OUTCOMES	**PO DESCRIPTION**		
PO 1	**Critical Thinking:** Take informed actions after identifying the assumptions that frame our thinking and actions, checking out the degree to which these assumptions are accurate and valid, and looking at our ideas and decisions (intellectual, organizational, and personal) from different perspectives.		
PO 2	**Effective Communication:** Speak, read, write and listen clearly in person and through electonic media in English and in one Indian language, and make meaning of the word by connecting people, ideas, books, media and technology.		
PO 3	**Effective Citizenship:** Demonstrateempathetic social concern and equity centred national development, and the ability to act an informed awareness of issues and participate in civic life through volunteering.		
PO 4	**Environment and Sustainability:** Understand the issues of environmental contexts and sustainale development.		
PO 5	**Ethics:** Recognise different value systems including your own, understand the moral dimensions of your decisions, and accept responsibility for them.		
PO 6	**Global Perspective:** Understand the econmic, social and ecological connections that link the world's nations and people.		
PROGRAMME	BACHELOR OF COMPUTER APPLICATIONS [MOBILE APPLICATIONS AND CLOUD	**SEMESTER**	5
COURSE CODE AND TITLE	U5CRBCA5 Fundamentals of Storage	**CREDIT**	4
FACULTY NAME	Regitha Baiju, Neethu A S		
PROGRAM SPECIFIC OUTCOMES	**PSO DESCRIPTION**		
PSO1	Apply the theoretical foundations of computer science in modelling and developing solutions to the complex and real world problems.		
PSO2	Comprehend, explore and build up computer programs, applications in the allied areas like Algorithms, Multimedia, Web Design and android applications for efficient design of computer-based systems that meet the needs of industry and society.		
PSO3	Develop skills in android and cloud technology development so as to enable the graduates to take up employment/self-employment in global technical market.		
PSO4	Apply knowledge of layered network models, protocols, technologies, topologies and security policies for building network and internet based applications.		

COURSE OUTCOME

CO 1	Understand the fundamentals of storage centric and server centric systems
CO 2	Describe how data centre’s maintain the data
CO 3	Understand the different data storage technologies

CO 4	Understand the different data storage and data access methods
CO 5	Understand data storage management methods
CO 6	Apply the design and architect data storage solution for an organization

SACRED HEART COLLEGE(AUTONOMOUS), THEVARA
DEPARTMENT OF COMPUTER SCIENCE
COURSE PLAN
ACADEMIC YEAR 2018-2019

PROGRAMME	BACHELOR OF COMPUTER APPLICATIONS [MOBILE APPLICATIONS AND CLOUD TECHNOLOGY]	**SEMESTER**	5
COURSE CODE AND TITLE	U5CRBCA16 Advanced Android	**CREDIT**	5
HOURS/WEEK	5	**HOURS/SEM**	5
FACULTY NAME	Neethu A S		

	PROGRAMME SPECIFIC OUTCOMES (PSOs)
PSO1	Apply the theoretical foundations of computer science in modelling and developing solutions to the complex and real world problems.
PSO2	Comprehend, explore and build up computer programs, applications in the allied areas like Algorithms, Multimedia, Web Design and android applications for efficient design of computer-based systems that meet the needs of industry and society.
PSO3	Develop skills in android and cloud technology development so as to enable the graduates to take up employment/self-employment in global technical market.
PSO4	Apply knowledge of layered network models, protocols, technologies, topologies and security policies for building network and internet based applications.
	COURSE OBJECTIVES:
1	Define the callback methods to start the service and bind the service, implement IBinder object and Remote Bound Service
2	Describe IPC using Messenger, Handler and AIDL
3	Explain the various ways to create and manage different types of notifications and role of Notification Manage, use Embedded application
4	Describe the features of Canvas and OpenGL in rendering Graphics, define the fields and elements of different animation, define and instantiate a Drawable
5	Define the methods used at each stage of process life cycle, tasks, describe the worker thread and UI thread, lifecycle of a thread.
6	Describe the steps to add web view, demostrate XML and JSON parsing, purpose of using SOAP web se rvices and security aspects

SL NO	SESSION		Method of Teaching	VALUE ADDITIONS	CO	PO/PSO	Cognitive Leve(CL)	Knowledge Category (KC)
		MODULE I						
1	1	Android services Introduction	PPT		CO1	PSO2,PSO3	U	F
2	1	Services lifecycle and creation	PPT		CO1	PSO2,PSO3	A	S
3	1	Bounded and Started Services	PPT		CO1	PSO2,PSO3	U	C
4	1	Scheduling of Services	PPT		CO1	PSO2,PSO3	U	C
5	1	Messengers and Handlers	PPT		CO2	PSO2,PSO3	A	C
6	1	AIDL	PPT		CO2	PSO2,PSO3	U	C
7	1	Remote Service Communication	PPT		CO2	PSO2,PSO3	U	C
8	1	Notifications	PPT		CO3	PSO2,PSO3	A	C
9	1	Android Networking	PPT		CO3	PSO2,PSO3	U	F
11	2	Integrating Embedded Applications	PPT		CO3	PSO2,PSO3	A	C
		MODULE II						
12	1	Graphics and Animation Introduction	PPT		CO4	PSO2,PSO3	U	F
13	1	Graphics components in Android	PPT		CO4	PSO2,PSO3	U	F
14	1	Displaying graphics with OpenGLES	PPT		CO4	PSO2,PSO3	U	C
15	2	Draw on Canvas and drawables	PPT		CO4	PSO2,PSO3	A	C
16	1	Animation framework	PPT		CO4	PSO2,PSO3	U	F
17	1	Create scene and apply tranistion	PPT		CO4	PSO2,PSO3	U	C
18	2	Property, View Animation	PPT		CO4	PSO2,PSO3	A	C
19	2	Tween, Frame, Interpolators	PPT		CO4	PSO2,PSO3	A	C
20	2	Crossfading two views,Viewpager	PPT		CO4	PSO2,PSO3	A	C
21	3	Card flip, zooming a view, animate layout changes	PPT		CO4	PSO2,PSO3	A	C
		TEST I						
		MODULE III						
22	1	Tasks	PPT		CO5	PSO2,PSO3	U	F
23	1	Backstacking	PPT		CO5	PSO2,PSO3	U	C
24	1	Switching between tasks	PPT		CO5	PSO2,PSO3	A	C
25	1	Processes - lifecycle, types	PPT		CO5	PSO2,PSO3	U	C
26	1	Thread - creation	PPT		CO5	PSO2,PSO3	A	C
27	1	Thread lifecycle, types	PPT		CO5	PSO2,PSO3	U	C
28	1	Thread looper	PPT		CO5	PSO2,PSO3	U	C
29	1	Thread Handler	PPT		CO5	PSO2,PSO3	U	C
30	1	How to post Message and Runnable from a thread	PPT		CO5	PSO2,PSO4	A	C
31	2	Async Task class creation and use	PPT		CO5	PSO2,PSO5	A	C
		MODULE IV						
32	1	Web View and View Port	PPT		CO6	PSO2,PSO3	U	F
33	1	Debugging web applications	PPT		CO6	PSO2,PSO3	U	F
34	1	Communication Protocols	PPT		CO6	PSO2,PSO3	U	F
35	2	Interacting with web services	PPT		CO6	PSO2,PSO3	U	C
36	1	XML data exchange format	PPT		CO6	PSO2,PSO3	Analyze	C
37	2	JSON data exchange format	PPT		CO6	PSO2,PSO3	Analyze	C
38	2	Exchanging data over server	PPT		CO6	PSO2,PSO3	U	C
39	1	XML parsing	PPT		CO6	PSO2,PSO3	U	C
40	1	JSON parsing	PPT		CO6	PSO2,PSO3	A	C
		TEST II						

MODULE V								
42	1	Introduction to security features	PPT		CO6	PSO2,PSO3	U	F
43	1	Kernal level security	PPT		CO6	PSO2,PSO3	U	F
44	1	Application level security	PPT		CO6	PSO2,PSO3	U	F
45	1	Using permissions	PPT		CO6	PSO2,PSO3	U	F
46	1	Designing for performance	PPT		CO6	PSO2,PSO3	U	F
47	1	Building apps for wearables	PPT		CO6	PSO2,PSO3	Analyze	C
48	1	Building apps for TV	PPT		CO6	PSO2,PSO3	Analyze	C
49	1	Monetization	PPT		CO6	PSO2,PSO3	U	F
50	1	In App Billing	PPT		CO6	PSO2,PSO3	U	F

TEXT BOOKS & REFERNCES				
1	Professional Android 4 Development by Reto Meier, John Wiley and Sons, 2012			
2	Android Application Development Cookbook, by Wei-Meng Lee, John Wiley and Sons, 2013			
3	Android in Action, Third Edition, by W. Frank Ableson, RobiSen, Chris King, C. Enrique Ortiz, 2012			

Sl No	Module	Topic	Nature of Assignment	Alignment with POs, PSOs and COs
1	1	Create an android application to display and cancel notification on button click.	Lab program	PO1,PSO2,PSO3,CO3
2	1	Create an android application to login and register using shared preferences.	Lab program	PO1,PSO2,PSO3,CO3
3	1	Create an android application to play music using services.	Lab program	PO1,PSO2,PSO3,CO1
4	4	Create an android application to download file from server.	Lab program	PO1,PSO2,PSO3,CO6
5	3	Create an android application to download image using Async task.	Lab program	PO1,PSO2,PSO3,CO5
6	1	Create an android application to send Email using Intent.	Lab program	PO1,PSO2,PSO3,CO3
7	2	Create an android application to draw on a Canvas.	Lab program	PO1,PSO2,PSO3,CO4
8	1	Create an android application to demonstrate to receive Broadcast.	Lab program	PO1,PSO2,PSO3,CO2
9	2	Create an android application to demonstrate animation.	Lab program	PO1,PSO2,PSO3,CO4
10	2	Create an android application to demonstrate shape drawables, gradient drawables, radial gradient drawables, sweep gradient.	Lab program	PO1,PSO2,PSO3,CO4
11	4	Create an android application to demonstrate JSON parsing.	Lab program	PO1,PSO2,PSO3,CO6

SESSION PLANs					
ACADEMIC YEAR 2018-2019					
PROGRAMME	**:**	**COMPUTER SCIENCE**	**DATE**	**:**	**05.11.2018**
SEMESTER	**:**	**6**	**BRANCH**	**:**	**BCA**
SUBJECT CODE AND TITLE	**:**	**19U6CRBCA19 Mobile Testing**	**CREDIT**	**:**	**4**
FACULTY NAME	**:**	**NEETHU A S**			
PROGRAMME OUTCOMES (POs)	**:**	**PO1** - Ability to identify activities associated with software development cycle and types of testing **PO2-** Ability to write test case, test suite, test runners **PO3**.-Ability to examine the use of Junit framework of Android, various class of JUnit **PO4-** To equip students with mobile application testing landscape, compatibility testing and methods **PO5-**Ability to test with mobile app testing environment and identify the differences that is there while testing the physical devices, cloud devices and emulators **PO6-**To equip students with the Basics of MonkeytalkTool for Mobile Application Testing **PO7**- To familiarise the students how to use Robotium in mobile testing			

Sl No	Topic	Number of sessions required	Value additions	POs
Module 1: Testing Fundamentals				
1	Testing Fundamentals - need of testing: TC, TestSuite, TestRunners	1	Lecturing Using Slides	PO2
2	Methods of testing: Functional, Black Box testing	1	Lecturing Using Slides	PO1
3	White box testing	1	Lecturing Using Slides	PO1
4	Regression testing, Stress testing,	1	Lecturing Using Slides	PO1

	Monkey testing			
5	Testcase, Rules to write TC, Testsuite	1	Lecturing Using Slides	PO2
6	TestRunners	1	Lecturing Using Slides	PO2
Module 2: Android Testing framework				
7	Android Testing framework introduction	1	Lecturing Using Slides	PO3
8	Junit Test Framework-features	1	Lecturing Using Slides	PO3
9	Junit in Android	1	Lecturing Using Slides	PO3
10	Junit classes	1	Lecturing Using Slides	PO3
11	Test Projects	1	Lecturing Using Slides	PO3
12	Directory structure, Android Testing API, Mock objects	1	Lecturing Using Slides	PO3
13	What to test	1	Lecturing Using Slides	PO1
14	ContentProvider Testing	1	Lecturing Using Slides	PO1
15	Service testing	1	Lecturing Using Slides	PO1
16	Choosing devices to test	1	Lecturing Using Slides	PO1
17	Testing tools	1	Demonstration	PO1
18	REVISION	1	Demonstration	PO1
19	REVISION	1	Demonstration	PO3
20	REVISION	1	Demonstration	PO3
21	CIA-I			
Module 3: Mobile apps testing				
22	Mobile apps testing-need, types of testing	1	Lecturing Using Slides	PO4
23	Mobile testing landscape	1	Lecturing Using Slides	PO4

24	Common types of testing	1	Lecturing Using Slides	PO1
25	UI and functional testing methods of mobile applications	1	Lecturing Using Slides	PO4
26	Compatibility testing need and methods	1	Lecturing Using Slides	PO4
27	Challenges in testing	1	Lecturing Using Slides	PO4
28	Difference Between Testing Mobile Web and Testing Native App	1	Lecturing Using Slides	PO4
29	Nonfunctional testing methods of mobile applications	1	Lecturing Using Slides	PO4
30	Performance testing	1	Lecturing Using Slides	PO1
31	Security testing	1	Lecturing Using Slides	PO1
32	Types of operation testing for mobile- Installation testing	1	Lecturing Using Slides	PO1
	Uninstallation testing	1	Lecturing Using Slides	PO1
33	Update testing/ Upgrade testing	1	Lecturing Using Slides	PO1
34	Integration with phone features	1	Lecturing Using Slides	PO4
Module 4: Mobile testing tools				
35	Mobile testing tools, Testing lifecycle of mobile applications	1	Lecturing Using Slides	PO5
36	Alternating of testing environments for mobile app testing	1	Lecturing Using Slides	PO5
37	Differentiate between testing on physical devices, cloud devices, emulators	1	Lecturing Using Slides	PO5
38	Mobile test automation tools –	1	Lecturing Using Slides	PO5

	Monkey talk, Image recognition, OCR			
39	Mobile test automation tools- Native object recognition, capture and replay, Tool type recommendations	1	Lecturing Using Slides	PO5
40	Monkey talk: key features of monkey talk tool, installation	1	Demonstration	PO6
41	Use of monkeytalk tool for mobile application on PC connected device	1	Demonstration	PO6
42	Use of monkeytalk tool for mobile web	1	Demonstration	PO6
43	Use of monkeytalk tool for mobile application for cloud device	1	Demonstration	PO6
Module 5: UI and functional testing using Monkey talk				
44	UI and functional testing using Monkey talk	1	Lecturing Using Slides	PO6
45	Testsuite Monkey talk	1	Lecturing Using Slides	PO6
46	Record and Play back feature	1	Lecturing Using Slides	PO6
47	Testing script	1	Lecturing Using Slides	PO6
48	Verification techniques	1	Lecturing Using Slides	PO6
49	Reporting features	1	Lecturing Using Slides	PO6
50	Using Robotium – Creating and running test cases	1	Demonstration	PO7
51	Robotium framework	1	Lecturing Using Slides	PO7
52	Test an app with Robotium	1	Demonstration	PO7

53	Data driven testing methods	1	Lecturing Using Slides	PO7
54	REVISION	1	Demonstration with Example program	PO6
55	REVISION	1	Demonstration with Example program	PO7
56	REVISION	1	Demonstration with Example program	PO6
57	REVISION	1	Demonstration with Example program	PO6
58	REVISION	1	Demonstration with Example program	PO6
59	REVISION	1	Demonstration with Example program	PO7
60	REVISION	1	Demonstration with Example program	PO6
61	CIA II	1	2 HOURS	
62	REVISION	1		
63	REVISION	1		
64	REVISION	1		
65	REVISION	1		
66	REVISION	1		
67	REVISION	1		
68	REVISION	1		
69	REVISION	1		
70	REVISION	1		
71	REVISION	1		
72	REVISION	1		
73	REVISION	1		
74	REVISION	1		
75	Evaluation of the Course	1		

TEXTBOOKS	REFERENCES
1. Android Application Testing Guide, Diego Torres Milano, 2010 2. Robotium Automated Testing for Android, Hrushikesh Zadgaonkar, 2011	1. A Practical Guide to Testing Wireless Smartphone Applications by Julian Harty, Mahadev Satyanarayanan, 2011 2. Testing Applications on the Web: Test Planning for Mobile and Internet-Based Systems Hung Q. Nguyen, Bob Johnson, Michael Hackett, 2012

COURSE ASSIGNMENTS: In addition to readings for each class and participation in class discussions and activities, there are three assignments for this course:

1. This code is designed to execute two test cases on a simple file. Creating a class with file as a text fixture

```
public class OutputFileTest {
    private File output;
    output = new File(...);
    output.delete();
public void testFile1(){
        //Code to verify Test Case 1
}
    output.delete();
    output = new File(...);
public void testFile2(){
        //Code to verify Test Case 2
}
```

```
 output.delete();
}
```

GRADING: Grades will be determined as follows: (1) presentation: 5 marks of CIA ; (2) assignment: 5 marks of CIA (3) CIA 1: 5 marks of CIA (4) CIA 2 : 5 marks of CIA (5) Class Attendance: 5 marks of CIA

Faculty Signature **HOD Signature**

SESSION PLAN					
ACADEMIC YEAR 2018-2019					
PROGRAMME	**:**	**SCIENCE**	**DATE**	**:**	**05.11.2018**
SEMESTER	**:**	**6**	**BRANCH**	**:**	**BCA**
SUBJECT CODE AND TITLE	**:**	**U6CRBCA16 INTRODUCTION TO MOBILE UI AND UX**	**CREDIT**	**:**	**2**
FACULTY NAME	**:**	**Mr. SANTHOSH KUMAR K P**			

COURSE OBJECTIVES:

The objective of the course is to present an introduction to UI and UX design, with an emphasis on how to organize, maintain - efficiently, and effectively, the user interfaces.

COURSE OUTCOMES:

Course Outcomes: After completing this course successfully, the students will be able to:	
CO 1	Understand the different issues, models involved in the human computer interfaces
CO 2	Study the design and interaction style of interfaces.
CO 3	Develop the mobile UI for applications.
CO 4	Develop an understanding of essential JS concepts using Angular JS, HTML and CSS.
CO 5	Design and build a simple user interface applications using Angular JS, HTML and CSS.

SL NO:	Topic to be covered	No of Session(s) Required	Value additions	CO's
	Module 1			
1	Introduction to HCI	1		CO 1
2	Introduction to HCI: usability and evaluation	1		CO 1
3	The human	1		CO 1
4	The computer	1		CO 1
5	The interaction	1		CO 1
6	The interaction	1		CO 1
7	Models and Theories	1		CO 1
8	Cognitive model	1		CO 1
9	Communication and collaborative model	1		CO 1
10	Task analysis, Dialog	1		CO 1
11	Model of the system	1		CO 1
Module 2				
12	Managing Design Processes: Introduction	1		CO 2
13	Managing Design Processes: The Three Pillars of Design	1		CO 2
14	Managing Design Processes: Development Methodologies	1		CO 2
15	Managing Design Processes: Participatory Design	1		CO 2
16	Evaluating Interface Designs: Expert Reviews	1		CO 2
17	Evaluating Interface Designs: Usability Testing	1		CO 2
18	Evaluating Interface Designs: Acceptance Tests	1		CO 2
19	Interaction Style	1		CO 2
20	Direct Manipulation and Virtual Environments	1		CO 2
20	CIA - I	1	1 hr descriptive test	
21	Menu Selection, Form Fillin, and Dialog Boxes	1		CO 2
27	Command and Natural Languages	1		CO 2

28	Command and Natural Languages	1		CO 2
29	Naming and Abbreviations	1		CO 2
30	Evaluation of the CIA-I	1		
Module 3				
31	Mobile UI design	1		CO 3
32	Disruption	1		CO 3
33	Disruption	1		CO 3
34	Innovation	1		CO 3
35	Innovation	1		CO 3
36	Mobile Interaction Styles: Keypads, Touchpads, Gestures	1		CO 3
37	Design Tools	1		CO 3
Module 4				
38	Angular JS with HTML CSS	1		CO 4
39	Introduction, expression	1		CO 4
40	Directives, Model	1		CO 4
41	CIA II	2	2 hrs descriptive exam	
42	Data binding, Controller	1		CO 4
43	Scopes, filters	1		CO 4
44	Services, HTTP	1		CO 4
45	Table, sql	1		CO 4
46	Events, forms, validation	1		CO 4
Module 5				
47	UI practice Examples with js and HTML (1)	1		CO 5
48	UI practice Examples with js and HTML (2)	1		CO 5
49	UI practice Examples with js and HTML (3)	1		CO 5
50	UI practice Examples with js and HTML (4)	1		CO 5
51	UI practice Examples with js and HTML (5)	1		CO 5
52	UI practice Examples with js and HTML (6)	1		CO 5

53	Revision	1		CO 5
54	Revision	1		CO 5

TEXT BOOKS:

1. "Human Computer Interaction" by Alan Dix, Janet Finlay , ISBN :9788131717035, Pearson Education (2004)
2. "Designing the User Interface - Strategies for Effective Human Computer Interaction", by Ben Shneiderman. Pearson Education (2010)
3. The Essential Guide to User Interface Design: An Introduction to GUI Design Principles and Techniques, by Wilbert O. Galitz. Wiley (2007)

ASSIGNMENTS/EXERCISES – Details & Guidelines

	Date of submission/ completion	**Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)**	**Weighttage**	**CO**
1	28/6/2018	Assignments on UI models	2	CO 1
2	6/7/2018	Assignment on Interactive Style	2	CO 2
3	19/7/2018	Assignment on js applications	2	CO 4

GROUP ASSIGNMENTS/EXERCISES – Details & Guidelines

	Date of submission/ completion	**Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)**	**Weighttage**	**CO**
CO1	28/6/2018	Each Group of 3 students: An application with JS	4	CO 5

SESSION PLAN					
ACADEMIC YEAR 2018-2019					
PROGRAMME	**:**	**BCA**	**DATE**	**:**	**05.11.2018**
SEMESTER	**:**	**VI**	**BRANCH**	**:**	Computer Science,Core
SUBJECT CODE AND TITLE	**:**	**Mobile Ecosystem and Business Models**	**CREDIT**	**:**	**3**
FACULTY NAME	**:**	**Mrs. Christy Jacqueline**			
PROGRAMME OUTCOMES (POs)	**:**	**PO1 – To explain the value generating system** **PO2- To Provide an overview of Mobile Market** **PO3 - To understand the different business models** **PO4- To analyze various case studies** **PO5- To describe the working of Mobile Ecosystem**			

S. No	Topic	No of Session(s) Required	Value additions	POs
UNIT -1				
1	Introduction Learning outcome: ➔ Describe Business and its activities	3	Reading: Maximillano Firtman, Programming the Mobile Web, published by O'reilly Media Inc.	PO1 PO2
2	Value Generating Ecosystem Learning Outcome:	3		PO1 PO2

	➔ To analyze different activities of Business ➔ To equip in Business Foundations and Mobile Ecosystem ➔ Define Ecosystem models ➔ Different business organizations and the business value ➔ Create a business plan ➔ Explain in detail about the different Ecosystem models			
3	User Experience and I- Mode Learning Outcome: ➔ Elaborate on user experience ➔ Develop a business model ➔ Fine tune a Business model canvas	4		PO1, PO2 PO5
4	Overview of Mobile Market Learning Outcome: ➔ Explain the different data types in C++? ➔ To understand different tokens in C++?	3	**Reading:** Sebastian Thalanany, Mobile evolution: Insights on connectivity and space	PO1 PO2
5	Business Ecosystem Learning Outcome: ➔ Describe Business Ecosystem and its importance ➔ How to efficiently use the technology resources	3	Quiz	PO1 PO2
6	Business Ecosystem Learning Outcome: ➔ How to create relationships of a business ecosystem ➔ Define Moore's Ecosystem ➔ To understand the life cycle of a business Ecosystem	3	Brian Fling,Mobile Ecosystem, published by O'reilly Media Inc.	PO1 PO2

7	Mobile Ecosystem Learning Outcome: ➔ Evolution of Mobile Ecosystem ➔ To understand the components of Mobile Ecosystem ➔ To elaborate on the key players in the Mobile ecosystem ➔ To describe Mobile Ecosystem and its evolution ➔ Identify the Key players f Mobile Ecosystem ➔ Define recent disruptions and transformations of Mobile Ecosystem	1	Reading: Eamonn Kelly, Business Ecosystem come of age, Deloitee Univeristy Press	PO1 PO2
UNIT 2 OVERVIEW OF MOBILE MARKETS				
8	Introduction to Markets : Learning Outcome: ➔ To describe a market	1	Michael E. Porter, Competitive Advantage: creating and sustaining superior performance, The Free Press	PO1
9	Market Sizing Learning Outcome: ➔ Different phases of Market Size ➔ To analyze the Market sizing	2	Bill Aulet, Disciplined Entrepreneurship, Wiley	PO1 PO2 PO3
10	Market Sizing Learning Outcome: ➔ To outline the process of market discovery and validation ➔ To know how to segment and size a market ➔ Ability to discover market factors ➔	2	Case study: Ways of validating the market with a new product	PO2

11	Mobile Markets Learning Outcome: ➔ Describe the Mobile Services Market ➔ To understand the Mobile Handset Market	2		PO3
12	Mobile Markets Learning Outcome: ➔ To describe the Mobile Apps Market ➔ Outline mobile network trends ➔ Describe mobile usage trends	2	Understanding Market and strategy,Malcom Morley, Koganpage,2014	PO2 PO4
13	Mobility- Trends and Challenges Learning Outcome: ➔ To demonstrate a broad understanding of mobile network and mobile usage	4		PO2
14	Mobility- Trends and Challenges Learning Outcome: ➔ To understand the effect of Mobile Marketing ➔ How does the Mobile Market is effectives for business ➔ To explain how MMS Marketing is better than SMS Marketing	2	Daniel Rowels, Mobile Marketing: How Mobile technology is revolutionizing marketing, koganpage,2013	PO2 PO6
UNIT 3 **INTRODUCTION TO MOBILE MARKETING**				
15	Introduction to Mobile Marketing strategy Learning Outcome: ➔ To know about Mobile Marketing ➔ To describe mobile marketing	2	Quiz	PO2

16	Introduction to Mobile Marketing strategy Learning Outcome: ➔ Need for Mobile Marketing ➔ Outline Mobile Marketing best practices	1		PO2
17	Introduction to Mobile Marketing strategy Learning Outcome: ➔ How to test mobile marketing strategy	2		PO2
18	Testing tools for Mobile Marketing strategy Learning Outcome: ➔ To describe about the testing tools used for mobile marketing strategy	3		PO2
19	Mobile Marketing best Practices Learning Outcome: ➔ Discuss about the mobile marketing best practices	4	Mobile Marketing: An Hour a Day, Rachel Pasqua, Noah Elkin, John Wiley & Sons, 2013	PO1 PO2 PO4
20	Mobile Advertising Basics Learning Outcome: ➔ To explain the meaning of search advertising and display advertising ➔ To describe various forms of mobile ads	2		PO1 PO2 PO6
21	Mobile Advertising Basics Learning Outcome: ➔ To describe the key players in the mobile ecosystem ➔ To understand the role of ad networks	3	Quiz	PO1 PO3

UNIT 4 **MOBILE APP MONETISATION**				
22	Mobile App Monetisation Learning Outcome ➔ To know about Mobile App Business Models ➔ To understand the challenges of the Mobile app Discovery	2	Group Discussion	PO4 PO3
23	Mobile App Monetisation Learning Outcome: ➔ To describe the strategies of Mobile app optimization ➔ To describe about the App Analytics and tools for collecting data	2		PO4
24	Mobile App Monetisation Learning Outcome: ➔ To define the type of mobile app business models ➔ Explain the different type of mobile app models	3	Seminar	PO4
25	Mobile App Analytics Learning Outcome: ➔ To describe about Mobile App Analytics ➔ To know the fundamentals of using analytics to understand customer behaviour	2	Seminar	PO4 PO5
26	Mobile App Analytics Learning Outcome: ➔ To define various tools used in mobile analytics ➔ To describe the use of collected data	1	quiz	PO5
UNIT -5 **MOBILE GAMING AND M-COMMERCE**				
27	Introduction Learning Outcome: ➔ To understand Mobile gaming and M-commerce	2		PO1 PO6

	➔ To know about importing successful games			
28	Mobile Gaming Learning Outcome: ➔ To describe the opportunities and challenges in careting a successful business in mobile gaming apps. ➔ To present a case study of a successful mobile game app company	2	Mobile commerce,karabi Bandyopadhyay, PHI Learning Pvt. Ltd, 2013	PO1 PO2 PO5
29	M-Commerce case studies Learning Outcome: ➔ To equip students with case studies of M-Commerce	3		
30	Revision and Seminar/Viva	2		
31	Revision and Seminar/Viva	2	Viva	

TEXTBOOKS	REFERENCES
1. Mobile Design and Development Practical concepts and techniques for creating mobile sites and web apps, By Brian Fling, O'Reilly Media, 2009 2. Ad hoc networking - technology and trends: trend report 2002/2001 by Anne Buttermann, Center for Digital Technology and Management (München), BoD – Books on Demand, 2001	1. Mobile Advertising: Supercharge Your Brand in the Exploding Wireless Market – 2008 - by Chetan Sharma, Joe Herzog, Victor Melfi 2. Mobile Marketing - How technology is revolutionizing marketing, communications and advertising - by Daniel Rowles, 2014 3. Mobile App Marketing and Monetization by Alex Genadinik, 2014

3. M-Commerce, 2013 by Paul Skeldon 4. Mobile Commerce, 2013 by Karabi Bandyopadhyay	

COURSE ASSIGNMENTS: In addition to readings for each class and participation in class discussions and activities, there are three assignments for this course:

- ***Assignment 1:***
  Case studies of M-commerce

- ***Assignment 2:***

➔ Value Generating Ecosystem
➔ Mobile App Monetisation
➔ Testing tools for Mobile Marketing strategy

Each student will present a **topic relevant to M-Commerce**
1) PART I: A presentation of the allocated topic is conducted
(2) PART II: Viva session for the presentation
(3) PART III: Report on the topic should be submitted

Faculty Signature

SESSION PLAN					
ACADEMIC YEAR 2018-2019					
PROGRAMME	**:**	**COMPUTER SCIENCE**	**DATE**	**:**	**12.11.2018**
SEMESTER	**:**	**6**	**BRANCH**	**:**	**BCA**
SUBJECT CODE AND TITLE	**:**	**19U6CRBCA18 Web Technology and Value-Added Services in Mobile**	**CREDIT**	**:**	**4**
FACULTY NAME	**:**	**NEETHU A S**			
PROGRAMME OUTCOMES (POs)	**:**	**PO1** - Ability to describe characteristics and requirement of mobile value added services **PO2-** Ability to explain mobile TV, video and OTT services, call waiting, call holding, voice mail box facilities in VAS **PO3**.-Ability to use operators, variables, arrays, control structures, functions and objects in JavaScript. **PO4-** Become adept at implementing client-side interfaces through the use of the DOM **PO5-**Ability to event handling, browser and media management in JavaScript			

Sl No	**Topic**	**No of sessions required**	**Value Additions**	**POs**
Module 1: Introduction to Mobile VAS				
1	Introduction to Mobile VAS	1	Lecturing Using Slides	PO1
2	Value added services	1	Lecturing Using Slides	PO1
3	Mobile VAS	1	Lecturing Using Slides	1PO1
4	Mobile VAS Technologies	1	Lecturing Using Slides	PO1
5	M Commerce	1	Lecturing Using Slides	PO1
6	M Commerce Applications	1	Lecturing Using Slides	PO1
7	Issues in m Commerce	1	Lecturing Using Slides	PO1

8	REVISION	1		
9	REVISION	1		
Module 2: Content based service				
10	Content based service Introduction	1	Lecturing Using Slides	PO2
11	MVAS types, MVAS importance	1	Lecturing Using Slides	PO2
12	Consumer value added service	1	Lecturing Using Slides	PO2
13	Network value added service	1	Lecturing Using Slides	PO2
14	Enterprise value added service	1	Lecturing Using Slides	PO2
15	Content Management System	1	Lecturing Using Slides	PO2
16	CMS architecture	1	Lecturing Using Slides	PO2
17	CMAS platforms	1	Lecturing Using Slides	PO2
18	REVISION	1		
19	REVISION	1		
20	REVISION	1		
21	CIA-I	1		
22	Mobile content based service	1	Lecturing Using Slides	PO2
23	Digital Asset Management	1	Lecturing Using Slides	PO2
24	Digital Rights Management	1	Lecturing Using Slides	PO2
25	CMS Billing and Reporting	1	Lecturing Using Slides	PO2
26	Subscriber Management	1	Lecturing Using Slides	PO2
27	Management tools	1	Lecturing Using Slides	PO2
Module 3: Scripting Languages				
28	Introduction to Scripting Languages	1	Lecturing Using Slides	PO3
29	Types of scripting languages	1	Lecturing Using Slides	PO3

30	JavaScript Basics-Data types, variables, operators, expressions, statements,	1	Demonstration with Example Programs	PO3
31	JavaScript Basics- flow control, loops	1	Demonstration with Example Programs	PO3
32	JavaScript objects	1	Lecturing Using Slides	PO3
	JavaScript math() object	1	Lecturing Using Slides	PO3
33	JavaScript date() object	1	Lecturing Using Slides	PO3
34	JavaScript arrays	1	Lecturing Using Slides	PO3
35	JavaScript functions	1	Demonstration with Example Programs	PO3
36	Error handling in JavaScript	1	Demonstration with Example Programs	PO3
37	REVISION	1	Example programs Assignment	
38	REVISION	1	Example programs Assignment	
Module 4: JavaScript object model				
39	JavaScript object model Introduction	1	Lecturing Using Slides	PO4
40	Document object model	1	Lecturing Using Slides	PO4
41	Standard DOM	1	Lecturing Using Slides	PO4
42	DOM and HTML	1	Demonstration with Example Programs	PO4
43	CSS Basics	1	Discussion with students	PO4
44	DOM and CSS	1	Demonstration with Example Programs	PO4
45	Event handling	1	Lecturing Using Slides	PO4
46	Event types	1	Lecturing Using Slides	PO4
47	REVISION	1	Example programs Assignment	
48	REVISION	1	Example programs Assignment	
Module 5: Windows, Frames, Overlay in JavaScript				

49	Windows, Frames, Overlay in JavaScript Introduction	1	Lecturing Using Slides	PO5
50	Window object- dialogs, controlling windows	1	Lecturing Using Slides	PO5
51	Form handling – form fields, form validation	1	Demonstration with Example Programs	PO5
52	User Interface Elements	1	Lecturing Using Slides	PO5
53	Browser Management	1	Lecturing Using Slides	PO5
54	Media Management	1	Lecturing Using Slides	PO5
55	REVISION	1	Example programs Assignment	
56	REVISION	1	Example programs Assignment	
57	REVISION	1	Example programs Assignment	
58	REVISION	1	Example programs Assignment	
59	REVISION	1	Example programs Assignment	
60	REVISION	1	Class Test	
61	CIA II	1	2 HOURS	
62	REVISION	1		
63	REVISION	1		
64	REVISION	1		
65	REVISION	1		
66	REVISION	1		
67	REVISION	1		
68	REVISION	1		
69	REVISION	1		
70	REVISION	1		
71	REVISION	1		
72	REVISION	1		
73	REVISION	1		
74	REVISION	1		
75	Evaluation of the Course	1		

TEXTBOOKS	REFERENCES
1. Mobile Messaging Technologies and Services: SMS, EMS, and MMS by Gwenaël Le Bodic, John Wiley and Sons, 2005 2. JavaScript: The Complete Reference, 2013 by Thomas Powell, Fritz Schneider	1. Voice application development with Voice XML by Rick Beasley, John, O'Reilly **2.** Next generation wireless applications: creating mobile applications in a Web by Paul Golding 3. Short Message Service (SMS): The Creation of Personal Global Text Messaging by Friedhelm Hillebrand, John Wiley & Sons, 2010

COURSE ASSIGNMENTS: In addition to readings for each class and participation in class discussions and activities, these are three assignments for this course:

1. Create a JavaScript simple multiplication table, asking the user the number of rows and columns he wants.
2. Create a sample JavaScript form program that collects the first name, last name, email, user id, password and confirms password from the user. All the inputs are mandatory and email address entered should be in correct format. Also, the values entered in the password and confirm password textboxes should be the same. After validating using JavaScript, In output display proper error messages in red color just next to the textbox where there is an error.
3. Display a simple message JavaScript message using Event "Welcome!!!" on your demo webpage and when the user hovers over the message, a popup should be displayed with a message "Welcome to my WebPage!!!".

GRADING: Grades will be determined as follows: (1) presentation: 5 marks of CIA ; (2) assignment: 5 marks of CIA (3) CIA 1: 5 marks of CIA (4) CIA 2 : 5 marks of CIA (5) Class Attendance: 5 marks of CIA

Faculty Signature **HOD Signature**