

Sacred Heart College (Autonomous)

Department of Computer Science

BCA

(Mobile Applications and Cloud Technology)

Course Plan

Academic Year: 2018-19

Semester VI

COURSE STRUCTURE

COURSE CODE	TITLE OF THE COURSE	NO. OF HRS./WEEK	CREDITS	TOTAL HRS./SEM
U6CRBCA16	Introduction to Mobile UI and UX	3	2	54
U6CRBCA17	Mobile Ecosystem and Business Models	4	4	72
U6CRBCA18	Web Technology and Value added services in Mobile	4	4	72
U6CRBCA19	Mobile Testing	4	4	72
U6PJBCA1	Project and Viva-Voce	10	6	150

COURSE PLAN:U6CRBCA16- INTRODUCTION TO MOBILE UI AND UX

PROGRAMME	BACHELOR OF COMPUTER APPLICATIONS	SEMESTER	6
COURSE CODE AND TITLE	16U6CRBCA16 INTRODUCTION TO MOBILE UI AND UX	CREDIT	2
HOURS/WEEK	3	HOURS/SEM	54
FACULTY NAME	SANTHOSH KUMAR K P		

COURSE OBJECTIVES
To classify the issues in Human Computer Interaction and model the interfaces for applications.
To evaluate the user interface design and the interaction styles used in applications.
To develop the User Interface for applications by using design tools.
To build JavaScript concepts using Angular JS, HTML and CSS
To design the simple user interface applications using Angular JS, HTML, CSS

SESSION	TOPIC	LEARNING RESOURCES	VALUE ADDITIONS	REMARKS
MODULE 1				
1	Introduction to HCI	Lecture with slides.		
2	Introduction to HCI: usability and evaluation	Lecture with slides.	video	
3	The human	Lecture with slides.		
4	The computer	Lecture with slides.		
5	The interaction	Lecture with slides.		
6	The interaction	Lecture with slides.		
7	Models and Theories	Lecture with slides.	Q & A Session	
8	Cognitive model	Lecture with		

		slides.		
9	Communication and collaborative model	Lecture with slides.		
10	Task analysis, Dialog	Lecture with slides.		
11	Model of the system	Lecture with slides.		
MODULE 2				
12	Managing Design Processes: Introduction	Lecture with slides.	Video	
13	Managing Design Processes: The Three Pillars of Design	Lecture with slides.		
14	Managing Design Processes: Development Methodologies	Lecture with slides.		
15	Managing Design Processes: Participatory Design	Lecture with slides.		
16	Evaluating Interface Designs: Expert Reviews	Lecture with slides.		
17	Evaluating Interface Designs: Usability Testing	Lecture with slides.		
18	Evaluating Interface Designs: Acceptance Tests	Lecture with slides.		
19	Interaction Style	Lecture with slides.		
20	Direct Manipulation and Virtual Environments	Lecture with slides.		
CIA-I				
21	Menu Selection, Form Fillin, and Dialog Boxes	Lecture with slides.	videos	
22	Command and Natural Languages	Lecture with slides.		
23	Command and Natural Languages	Lecture with slides.		
24	Naming and Abbreviations	Lecture with slides.		
25	Evaluation of the CIA-I	Lecture with slides.		
MODULE 3				
26	Mobile UI design	Lecture with slides.	Video	CO 3
27	Disruption	Lecture with slides.		CO 3
28	Disruption	Lecture with slides.		CO 3
29	Innovation	Lecture with		CO 3

		slides.		
30	Innovation	Lecture with slides.		
31	Mobile Interaction Styles: Keypads, Touchpads, Gestures	Lecture with slides.		
32	Design Tools	Lecture with slides.		
33	Design Tools	Lecture with slides.		
MODULE 4				
34	Angular JS with HTML CSS	Lecture with slides.	Q & A Session	
35	Introduction, expression	Lecture with slides.		
36	Directives, Model	Lecture with slides.		
37	Data binding, Controller	Lecture with slides.		
39	Data binding, Controller	Lecture with slides.		
40	Scopes, filters	Lecture with slides.		
41	Services, HTTP	Lecture with slides.		
42	Table, sql	Lecture with slides.		
43	Events, forms, validation	Lecture with slides.		
MODULE 5				
44	UI practice Examples with js and HTML (1)	Lecture and lab sessions	Experiments	
45	UI practice Examples with js and HTML (2)	Lecture and lab sessions	Experiments	
46	UI practice Examples with js and HTML (3)	Lecture and lab sessions	Experiments	
47	UI practice Examples with js and HTML (4)	Lecture and lab sessions	Experiments	
48	UI practice Examples with js and HTML (5)	Lecture and lab sessions	Experiments	
49	UI practice Examples with js and HTML (6)	Lecture and lab sessions	Experiments	
50	UI practice Examples with js and HTML (7)	Lecture and lab sessions	Experiments	
51	UI practice Examples with js and HTML (8)	Lecture and lab sessions	Experiments	

52	UI practice Examples with js and HTML (9)	Lecture and lab sessions	Experiments	
53	UI practice Examples with js and HTML (10)	Lecture and lab sessions	Experiments	
54	UI practice Examples with js and HTML (11)	Lecture and lab sessions	Experiments	

INDIVIDUAL ASSIGNMENTS/SEMINAR – Details & Guidelines

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	05-01-2019	Assignments on UI models
2	12-01-2019	Assignment on Interactive Style

GROUP ASSIGNMENTS/ACTIVITES – Details & Guidelines

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	15-02-2019	Assignment on JS applications

TEXT BOOKS:

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

COURSE PLAN: U6CRBCA17-MOBILE ECOSYSTEM AND BUSINESS MODELS

PROGRAMME	BACHELOR OF COMPUTER APPLICATIONS	SEMESTER	6
COURSE CODE AND TITLE	U6CRBCA17: MOBILE ECOSYSTEM AND BUSINESS MODELS	CREDIT	4
HOURS/WEEK	4	HOURS/SEM	72
FACULTY NAME	CHRISTY JACQUELINE		

COURSE OBJECTIVES

To understand business foundations and mobile ecosystem
To understand the basic of marketing and articulate potential benefits of mobile technology
To illustrate the basics of mobile marketing strategies
To apply the mobile marketing and advertising strategies
To understand the business models of mobile apps

SESSION	TOPIC	LEARNING RESOURCES	VALUE ADDITIONS	REMARKS
MODULE I				
1	Business Foundations	PPT		
2	Business organizations	PPT/Lecture		
3	Introduction to Business Ecosystem	PPT/Lecture	Video	
4	Importance of Business Ecosystem	PPT/Lecture		
5	Moore's Business Ecosystem	PPT/Lecture		
6	Strategic Roles in Moore's Ecosystem	PPT/Lecture		
7	Creating Business Value	Lecture		
8	Business Value Chain, Business Structure	Lecture		
9	Business plan, Business model, Comparison	Lecture		
10	Business model canvas	Lecture	E-resource	
11	Mobile Ecosystem	PPT/Lecture		
12	Components of Mobile ecosystem	PPT/Lecture		
13	Key Market Players	PPT/Lecture	E-resource	
14	Recent Disruptions and Transformation in Mobile ecosystem	PPT/Lecture		
MODULE II				
15	Introduction to Markets	PPT/Lecture		
16	Value proposition, Market Factors	Lecture		
17	Market Sizing	Lecture		
18	Mobile Markets	Lecture		
19	Types of Mobile Marketing	Lecture		
20	Mobility Trends and Challenges	PPT/Lecture		

21	Introduction to Markets	PPT/Lecture		
22	Value proposition, Market Factors	PPT/Lecture		
23	Market Sizing	PPT/Lecture		
24	Market Sizing Analysis	Lecture		
25	Approaches in Market Sizing Analysis	Lecture		
26	CIA-1			
27	Market Segmenting	Lecture		
28	Advantages of Market segmenting	Lecture		
29	Market Discovery	PPT/Lecture		
30	Market Validation	PPT/Lecture		
31	Mobile Markets	PPT/Lecture		
32	Types of Mobile Marketing			
MODULE III				
33	Mobile Marketing Strategy	PPT/Lecture		
34	How to test Mobile Marketing Strategy	PPT/Lecture		
35	Need for Mobile Marketing	PPT/Lecture		
36	Best Practices in mobile marketing	Lecture	Quiz	
37	Testing tools for mobile marketing strategy	Lecture		
38	Mobile Advertising Basics	PPT/Lecture		
39	Various Forms of Mobile Ads	PPT/Lecture		
40	Mobile Advertising Ecosystem	PPT/Lecture		
41	Key players in Mobile Ecosystem	PPT/Lecture		
42	Role of Mobile Ads	Lecture		
43	Significance of Ad networks	PPT/Lecture		
44	Search and display Ads	PPT/Lecture		
45	Strategies of Mobile Advertising Ecosystem	PPT/Lecture		
46	Examples in Search Ads	PPT/Lecture	E-resource	
47	Examples in Display ads	PPT/Lecture		
48	Strategies used	PPT/Lecture		
MODULE IV				
49	Mobile App Business Models	PPT/Lecture		
50	Challenges of Mobile App Discovery	Lecture		
51	Mobile app Monetization	PPT/Lecture		
52	Understanding App Stores	PPT/Lecture	Video	
53	Strategies of AppStore Optimisation	PPT/Lecture		
54	Tools for collecting data	PPT/Lecture		
55	Introduction to App Analytics	Lecture		
56	Fundamentals of using analytics	Lecture	Quiz	
57	Tools used in Mobile analytics	PPT/Lecture		
58	Using Analytics	PPT/Lecture		
59	Mobile App Business Models	PPT/Lecture		
60	Understanding App Stores	PPT/Lecture		
61	Challenges in App developing	PPT/Lecture		

62	Mobile Ad Formats	PPT/Lecture		
CIA – II MODULE V				
63	Mobile Gaming	Lecture	Demo video	
64	Paid Game Business	Lecture		
65	Pros and cons of Paid Game Business	Lecture	Quiz	
66	Challenges faced by gaming companies	Lecture		
67	Business Games- Roles	PPT/Lecture		
68	Free Games Vs Paid Game business	PPT/Lecture		
69	M-Commerce Vs E-Commerce	PPT/Lecture	E-resource	
70	Paid Game Business	Lecture		
71	Revision			
72	Revision			

INDIVIDUAL ASSIGNMENTS/SEMINAR – Details & Guidelines

Sl.No	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	10/02/2019	Testing tools for Mobile Marketing Strategy
2	12/02/2019	Mobile Gaming

GROUP ASSIGNMENTS/ACTIVITES – Details & Guidelines

Sl.No	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	07/01/2019	Business Game
2	17/01/2019	Mobile App Monetization

References

- 1) Drew Thomas, How to simplify Mobile App Data with Google Analytics
- 2) Julian Harty, Antoine Aymer, The Mobile Analytics Playbook
- 3) Mobile Design and Development Practical concepts and techniques for creating mobile sites and web apps, By Brian Fling, O'Reilly Media, 2009
- 4) 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

Web resource references:

- 1) Jesus Mena, Mobile Analytics
- 2) Mobile Advertising: Supercharge Your Brand in the Exploding Wireless Market – 2008 - by Chetan Sharma, Joe Herzog, Victor Melfi
- 3) Mobile Marketing - How technology is revolutionizing marketing, communications and advertising - by Daniel Rowles, 2014
- 4) Mobile App Marketing and Monetization by Alex Genadinik, 2014

COURSE PLAN: U6CRBCA18 -WEB TECHNOLOGY AND VALUE-ADDED SERVICES IN MOBILE

PROGRAMME	BACHELOR OF COMPUTER APPLICATIONS	SEMESTER	6
COURSE CODE AND TITLE	16U6CRBCA18 WEB TECHNOLOGY AND VALUE-ADDED SERVICES IN MOBILE	CREDIT	4
HOURS/WEEK	4	HOURS/SEM	72
FACULTY NAME	NEETHU A S		

COURSE OBJECTIVES

To describe characteristics and requirement of mobile value-added services
To discuss about mobile TV, video and OTT services, call waiting, call holding, voice mail box facilities in value added services
To interpret how to use operators, variables, arrays, control structures, functions and objects in JavaScript.
To appreciate implementing client-side interfaces through the use of the DOM
To discuss event handling, browser and media management in JavaScript

SESSION	TOPIC	LEARNING RESOURCES	VALUE ADDITIONS	REMARKS
MODULE I				
1	Introduction to Mobile VAS	PPT	video	
2	Value added services	PPT/Lecture		
3	Mobile VAS	PPT/Lecture		
4	Mobile VAS Technologies	PPT/Lecture	e-resource	
5	M Commerce	PPT/Lecture		
6	M Commerce Applications	PPT/Lecture		
7	Issues in M Commerce	Lecture		
8	M Commerce Business models	Lecture		
9	Wireless Business to Consumer Model	Lecture		
10	Wireless Business to Business Model	Lecture		
11	Wireless Consumer to Consumer Model	PPT/Lecture		

12	Wireless Consumer to Self Model	PPT/Lecture		
13	Revision			
14	Revision			
MODULE II				
15	Content based service Introduction	PPT/Lecture		
16	MVAS types, MVAS importance	Lecture		
17	Consumer value added service	Lecture		
18	Network value added service	Lecture		
19	Enterprise value added service	Lecture		
20	Content Management System	PPT/Lecture		
21	CMS architecture	PPT/Lecture		
22	CMAS platforms	PPT/Lecture		
23	Mobile content based service	PPT/Lecture		
24	Digital Asset Management	Lecture		
25	Digital Rights Management	PPT/Lecture		
26	CMS Billing and Reporting	PPT/Lecture		
27	Subscriber Management	PPT/Lecture		
28	Management tools	PPT/Lecture		
29	Mobile content based service	PPT/Lecture		
30	Digital Asset Management	PPT/Lecture		
31	Revision	Lecture	Q & Ans Session	
32	Revision	Lecture	Q & Ans Session	
33	Revision	PPT/Lecture		
MODULE III				
34	Introduction to Scripting Languages	PPT/Lecture		
35	Types of scripting languages	PPT/Lecture		
36	JavaScript Basics-Data types, variables, operators, expressions, statements,	Lecture		
37	JavaScript Basics- flow control, loops	Lecture	Q & Ans Session	
38	JavaScript objects	PPT/Lecture		
39	JavaScript math() object	PPT/Lecture		
40	JavaScript date() object	PPT/Lecture		
41	JavaScript arrays	PPT/Lecture		
42	JavaScript functions	Lecture		
43	Error handling in JavaScript	PPT/Lecture		
44	Revision	Lecture	Q & Ans Session	
45	Revision	Lecture	Q & Ans Session	
46	Revision	PPT/Lecture		
MODULE IV				
48	JavaScript object model Introduction	PPT/Lecture		

49	Document object model	PPT/Lecture		
50	Standard DOM	Lecture	Q & Ans Session	
51	DOM and HTML	PPT/Lecture		
52	HTML Basics	PPT/Lecture	Video	
53	CSS Basics	PPT/Lecture		
54	DOM and CSS	PPT/Lecture		
55	Event handling	PPT/Lecture		
56	Event types	Lecture		
57	Event handling example1	PPT/Lecture	Demo	
58	Event handling example2	PPT/Lecture		
59	Event handling example3	PPT/Lecture		
60	Revision	Lecture	Q & Ans Session	
61	Revision	Lecture	Q & Ans Session	
62	Revision	PPT/Lecture		
CIA – II				
MODULE V				
63	Windows, Frames, Overlay in JavaScript Introduction	PPT/Lecture		
64	Window object- dialogs, controlling windows	PPT/Lecture		
65	Form handling – form fields, form validation	PPT/Lecture		
66	Frames in JS	PPT/Lecture		
67	Overlay in JS	PPT/Lecture		
68	User Interface Elements	Lecture		
69	Browser Management	PPT/Lecture		
70	Media Management	PPT/Lecture		
71	Revision			
72	Revision			

INDIVIDUAL ASSIGNMENTS/SEMINAR – Details & Guidelines

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	12/01/2019	Create a JavaScript simple multiplication table, asking the user the number of rows and columns he wants.
2	18/2/2019	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!!!".

GROUP ASSIGNMENTS/ACTIVITIES – Details & Guidelines

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	09/02/2019	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.

References

- Mobile Messaging Technologies and Services: SMS, EMS, and MMS by Gwenaël Le Bodic, John Wiley and Sons, 2005
- JavaScript: The Complete Reference, 2013 by Thomas Powell, Fritz Schneider

Web resource references:

- Voice application development with Voice XML by Rick Beasley, John, O'Reilly

COURSE PLAN: U6CRBCA19 - MOBILE TESTING

PROGRAMME	BACHELOR OF COMPUTER APPLICATIONS	SEMESTER	6
COURSE CODE AND TITLE	U6CRBCA19 : MOBILE TESTING	CREDIT	4
HOURS/WEEK	4	HOURS/SEM	72
FACULTY NAME	NIJO ANTONY		

COURSE OBJECTIVE

To have professional outlook towards the Software Development Life cycle and need for it.

To know process involved in the software testing and different kinds of testing

To familiarize with the different testing tools and its features.

To know the difference in the real testing devices and emulators

To have experimental knowledge about Monkey tool for software testing.

SESSION	TOPIC	LEARNING RESOURCES	VALUE ADDITIONS	REMARKS
MODULE I				
1	SDLC	PPT/Lecture		
2	SDLC Phases	PPT/Lecture		
3	need of Testing; Functional, Black Box	PPT/Lecture		
4	White Box	PPT/Lecture	Quiz	
5	Regression	PPT/Lecture		
6	Stress	PPT/Lecture		
7	Monkey	PPT/Lecture		

8	TestCase	PPT/Lecture		
9	Rules to write TestCase	PPT/Lecture		
10	Testsuite	PPT/Lecture		
12	Test Runner	PPT/Lecture		
MODULE II				
13	JUnit: JUnit Test Framework	PPT/Lecture		
14	Features of JUnit Test Framework	PPT/Lecture		
15	Features of JUnit Test Framework Testing Fundamentals	PPT/Lecture		
16	TestCase	PPT/Lecture	Q & A Session	
17	TestSuite	Lecture		
18	TestRunners	Lecture		
19	JUnit classes	Lecture		
20	JUnit classes	Lecture		
21	JUnit in Android	PPT/Lecture		
22	Android Testing Framework	PPT/Lecture		
23	Test Projects-Directory Structure	PPT/Lecture		
24	Android Testing API	PPT/Lecture		
25	Mock Objects	Lecture		
26	Activity Testing, what to Test	Lecture	Quiz	
CIA-1				
27	ContentProvider Testing	Lecture		
28	service Testing, choosing devices to test	Lecture		
29	Testing tools	PPT/Lecture		
MODULE III				
30	Need of testing, Mobile applications testing landscape	PPT/Lecture		

31	Common types of testing	PPT/Lecture		
32	Common types of testing	Lecture	video	
	UI and functional testing strategies of mobile applications			
33	compatibility testing need and methods	PPT/Lecture		
34	non-functional testing methods of mobile applications	PPT/Lecture		
35	non-functional testing methods of mobile applications	PPT/Lecture		
36	Performance	Lecture		
37	security	Lecture		
38	types of operations testing for mobile applications	PPT/Lecture		
39	Installation	PPT/Lecture	Video	
40	Installation	PPT/Lecture		
41	un-installation	PPT/Lecture		
42	upgrade	Lecture		
43	methods of testing the mobile application integration with phone features	Lecture		
44	methods of testing the mobile application integration with phone features	PPT/Lecture		
45	challenges in testing	PPT/Lecture		
46	challenges in testing	PPT/Lecture		
47	difference between testing mobile web and testing native app	PPT/Lecture		
48	difference between testing mobile web and testing native app	PPT/Lecture		
Module IV				
49	Testing lifecycle of mobile applications	PPT/Lecture		
50	alternatives of testing environments for	PPT/Lecture		

	mobile apps testing			
51	Differentiate between testing on physical devices	PPT/Lecture		
52	cloud devices and emulators	PPT/Lecture		
53	different test automation tools for mobile applications	PPT/Lecture		
54	key features of monkey talk tool	PPT/Lecture		
55	installation and use of monkeytalk tool for a mobile application on emulator	PPT/Lecture		
56	installation and use of monkeytalk tool for a mobile application on PC connected device	PPT/Lecture		
57	installation and use of monkeytalk tool for a mobile web	PPT/Lecture		
58	installation and use of monkey talk tool for a mobile application for cloud device.	PPT/Lecture		
MODULE V				
59	Using monkey talk	PPT/Lecture		
60	creation of test project	PPT/Lecture		
61	test suite and test script	PPT/Lecture		
62	record and playback feature	PPT/Lecture		
CIA - II				
63	different verification techniques	PPT/Lecture		
64	data driven testing methods	PPT/Lecture		
65	synchronization	PPT/Lecture		
66	script parameterization	PPT/Lecture		
67	reporting features	PPT/Lecture		
68	Using Robotium - creation of test project	PPT/Lecture		
69	test suite	PPT/Lecture		
70	Robotium Framework	PPT/Lecture		

71	data driven testing methods	PPT/Lecture		
72	Revision	Discussion		

INDIVIDUAL ASSIGNMENTS/SEMINAR – Details & Guidelines

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	17 - 30/1/2019	Different Mobile Testing Tools

GROUP ASSIGNMENTS/ACTIVITES – Details & Guidelines

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	25/1/2019	Mobile Testing tools features

References

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