GANPAT UNIVERSITY

FACULTY OF COMPUTER APPLICATIONS

TEACHING AND EXAMINATION SCHEME

Programme	MASTER OF SCIENCE IN INFORMATION TECHNOLOGY (MOBILE APPLICATION)	Branch/Spec.	Computer Application
Semester	III		
Effective from Academic Year	2019-20	Effective for the batch Admitted in	June 2018

Subject Code	Subject Name	Teaching scheme												Examination scheme (Marks)					
		Credit						Hours (per week)						Theory			Practical		
		Lecture(DT)			Practical(Lab.)			Lecture(DT)			Practical(Lab.)			CE	SEE	Total	CE	SEE	Total
		L	TU	Total	P	TW	Total	L	TU	Total	P	TW	Total						
P53A1MP-II	MOBILE PROGRAMMING-II	2	-	2	2	-	2	2	-	2	4	0	4	40	60	100	20	30	50
P53A2VAS	VALUE ADDED SERVICES	2	-	2	2	-	2	2	-	2	4	0	4	40	60	100	20	30	50
P53A3EL4	USER INTERFACE DESIGN & LAB	2	-	2	2	-	2	2	-	2	4	-	4	40	60	100	20	30	50
P53A4EL5	I-PHONE APPLICATION DEVELOPMENT & LAB-II	2	-	2	2	-	2	2	-	2	4	-	4	40	60	100	20	30	50
P53A5SEO	SEARCH ENGINE OPTIMIZATION	2	-	2	2	-	2	2	-	2	4	-	4	40	60	100	20	30	50
P53A6IP1	INDUSTRIAL PROJECT -1	-	-	-	2		2	-		-	4	-	4	-	-		40	60	100
Total		10	00	10	12	-	12	10	-	10	24	-	24	200	300	500	140	210	350

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Programme	M.Sc IT (MOBILE APPLICATION)	Branch/Spec.	Computer Application
Semester	III	Version	1.0.0.0
Effective from Academic Year	2019-20	Effective for the batch Admitted in	June 2018
Subject code	P53A1MPII	Subject Name	Mobile Programming – II

Teaching scheme						Examination scheme (Marks)			
(Per week)	Lecture(DT)		Practical(Lab.)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	2	-	2	-	4	Theory	40	60	100
Hours	2	-	4	-	6	Practical	20	30	50

Pre-requisites:

Basic knowledge of High Level Programming Language and Object Oriented Programming Concepts using java.

Learning Outcome:

- Understanding about mobile application development technology
- Mobile Application Development for the Android platform using Android Studio

Theory syllabus

Unit	Content	Hrs
1	**Menu and Advance Layouts** • Menu [Option Menu, Context Menu] • Layouts (List view, Grid Layout, Card Layout, Recycler View, Drawer Layout) • Types of Adapter. (Array and Custom Adapter) • Use of Fragments • Floating Button	06
2	**Accessing Android Hardware** • Media API • Camera • Bluetooth • Native Android Content Providers	09
3	**Geocoding and Location Services** • Generating GEO Key • Location Based Services • Finding your Location • Introduction to Map kit	08
4	**Other UI Essentials and Peer-To-Peer Communication** • Animation • Rating Bar & Seek Bar • Android Telephony API • SMS Application • Calling Application	07

Practical content

List of programs specify by subject teacher based on above mention topics.

Text Books

1	LaurenDarceyandShaneConder,“Android WirelessApplicationDevelopment”,PearsonEducation
Reference Books	
1	RetoMeier,“ProfessionalAndroid2ApplicationDevelopment”,WileyIndiaPvt Ltd(2011)
2	Teach.Yourself.Android.Application.Development.in.24.Hours.2nd.Edition.
	Question Paper Scheme: **Note for Examiner** Q-1 must be common from any topics from syllabus. Q-2 and onwards must be from specific topics and internal choice or option can be given **Paper Structure** Q-1 (AttemptanySix Out of Eight: each question must be 5 marks)---30 Questions mustbecoveredallpossiblesection. Q-2 (MustbeFromtopics: Menu and Advance Layouts:(10 marks)) Q-3 (MustbeFromtopics: Accessing Android Hardware: (5 marks)) Q-4 (MustbeFromtopics: Geocoding and Location Services: (5 marks)) Q-5 (MustbeFromtopics: Other UI Essentials and Peer-To-Peer Communication: (10 marks))

Note: Version 1.0.0.1 (First Digit= New syllabus/Revision in Full Syllabus, Second Digit=Revision in Teaching Scheme,Third Digit=Revision in Exam Scheme, Forth Digit= Content Revision)

L=Lecture, TU=Tutorial, P= Practical/Lab., TW= Term work, DT= Direct Teaching, Lab.= Laboratory work

CE= Continuous Evaluation, SEE= Semester End Examination

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FACULTY OF COMPUTER APPLICATION

Programme	M.Sc IT (MOBILE APPLICATION)				Branch/Spec.	Computer Application			
Semester	III				Version	1.0.0.0			
Effective from Academic Year	2019-20				Effective for the batch Admitted in	June 2018			
Subject code	P53A2VAS		Subject Name		Value Added Services				
Teaching scheme					Examination scheme (Marks)				
(Per week)	Lecture(DT)		Practical(Lab.)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	2	-	2		4	Theory	40	60	100
Hours	2	-	4		6	Practical	20	30	50

Pre-requisites:

Basic knowledge of the Core Java Programming.

Learning Outcome:

At the end of this paper, students should be able to To make different types of small android application and overview of value added services.

Theory syllabus

Unit	Content	Hrs
1	**Mobile Service Architecture and Paradigms** • Application Paradigms for Mobile Services • Modes of Mobile Interaction • Mapping the interaction to the Network Model • Operator Challenges • Web2.0 Challenges	8
2	**Short Message Service** • Service Description • SMS Use Cases • GSM Network Architecture • Protocol Layers • SMS Report Delivery • Status Report	8
3	**Multimedia Messaging Service** • MMS Success Enablers • Commercial Availability of MMS • Value Propositions of MMS • MMS Architecture • MMS Features • Addressing Modes	7
4	**Voice Applications** • IP Based Converged Networks • VoIP Technology • Voice XML • Voice XML Architecture	7

	• Voice XML Features	
Practical content		
List of programs on the above mentioned topics as per decided by subject faculty		
Text Books		
1	Implementing Value-Added Telecom Services **by Johan Zuidweg**	
Reference Books		
1	Value-Added Services for Next Generation Networks (Informa Telecoms & Media) by Van de Velde, Thierry	
Paper Structure		
	Q-1 (Attempt any SIX Out of EIGHT: each question must be 5 marks) --- 30 Questions must be covered all possible section. **Q-2** (Must be From topics : **Mobile Service Architecture and Paradigms** (8 marks)) **Q-3** (Must be From topics : **Short Message Service** (7 marks)) **Q-4** (Must be From topics : **Multimedia Messaging Service** (8 marks)) **Q-5** (Must be From topics : **Voice Applications** (7 marks))	

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Programme	M.Sc IT (MOBILE APPLICATION)	Branch/Spec.	Computer Application
Semester	III	Version	1.0.0.0
Effective from Academic Year	2019-20	Effective for the batch Admitted in	June 2018
Subject code	P53A3EL4	Subject Name	Elective-IV-User Interface Design and Lab

Teaching scheme						Examination scheme (Marks)			
(Per week)	Lecture(DT)		Practical(Lab.)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	2	-	2		4	Theory	40	60	100
Hours	2	-	4		6	Practical	20	30	50

Pre-requisites:

Basic knowledge of the Core Java Programming.

Learning Outcome:

At the end of this paper, students should be able to To make different types of small android application and overview of value added services.

Theory syllabus

Unit	Content	Hrs
1	**Mobile Applications** • Mobilizing Applications • The Components of Mobile Applications • Selecting Application Technologies • InputModality • Display Modality • Distribution Methods	7
2	**Mobilize** • The Carry Principles • User Context • Device Proliferation • Targeted Design • Platform Providers	8
3	**Mobile UI Design Patterns** • UI Patterns • Universal Patterns • Corporate Patterns • Screen Design • Menus • Navigations	8
4	**UI Application Frameworks** • Android Input Library Framework • Symbian Input Library Framework • J2ME Input Library Framework	7

Practical content	
List of programs on the above mentioned topics as per decided by subject faculty	
Text Books	
1	Handbook of Research on User Interface Design and Evaluation for Mobile Technology (2 Volumes) , Joanna Landsmen.
Reference Books	
1	"The Essential Guide to user Interface Design: An Introduction to GUI Design Principles and Techniques" by Wilbert O Galitz.
2	Handbook of Research on User Interface Design and Evaluation for Mobile Technology, Joanna Lumsden.
Paper Structure	
	Q-1 (Attempt any SIX Out of EIGHT: each question must be 5 marks) --- 30 Questions must be covered all possible section. **Q-2** (Must be From topics : **Mobile Applications** (8 marks)) **Q-3** (Must be From topics : **Mobilize**(7 marks)) **Q-4** (Must be From topics : **Mobile UI Design Patterns**(8 marks)) **Q-5** (Must be From topics : **UI Application Frameworks**(7 marks))

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Programme	M.Sc IT (MOBILE APPLICATION)				Branch/Spec.	Computer Applications			
Semester	III				Version	1.0.0.0			
Effective from Academic Year	2019-20				Effective for the batch Admitted in	June 2018			
Subject code	P53A4EL5	Subject Name			Elective V: IPhone Application Development & Lab – II				
Teaching scheme					Examination scheme (Marks)				
(Per week)	Lecture(DT)		Practical(Lab.)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	2	-	2	-	4	Theory	40	60	100
Hours	2	-	4	-	6	Practical	20	30	50

Pre-requisites:

Student must have knowledge of Programing language like C,VB, C# and concepts of OOPS.

Learning Outcome:

Student can create IPhone based mobile application. Student can also upload their apps on Apple Store.

Theory syllabus

Unit	Content	Hrs
1	**Introduction to IOS Application Programing** Introduction to Objective C and Swift The Development Tools, the Learning Approach and the App Idea Your First Taste of Swift with Playgrounds Introduction to Auto Layout Designing UI Using Stack Views	04
2	**Introduction to Prototyping** Creating a Simple Table-based App,Working with Static Table Views, Customize Table Views Using Prototype Cell, Interacting with Table View, edition of row, Table Row Deletion, Swipe for Action, Activity Controller and MVC	06
3	**Outlets, Action,Segue** View Controller to Outlet and Actions, Using alert View, Introduction to Navigation Controller and Segue Object Oriented Programming, Project Organization and Code Documentation Detail View Enhancement	04
4	**Navigation, animations and MAP:** Navigation on multiple pages, Navigation Bar Customization Extensions and Dynamic Type Working with Maps, Device Rotation Basic Animations	05
5	**Explore Interface with Input and screen** Using keyboard, customizing the types of input, set keypad with number pad, Exploring Tab Bars and Storyboard References Exploring CloudKit, Keychain	05

6	**Working with DATABASE** Using SQLite, Creating and Opening Database, Creating Table, Bind Variables, Retrieving Records.	06
Practical content		
List of programs specified by the subject teacher based on above mentioned topics		
Text Books		
1	Beginning IOS Programing with Swift –by AppCoda	
Reference Books		
1	Beginning Swift Programming (WROX) by Wei-Meng Lee	
2	The Swift Developer's Cookbook by Packt Publishing Limited	
3	https://www.appcoda.com/learnswift/	
	Note for Examiner Q-1 must be common from any topics from syllabus. Q-2 and onwards must be from specific topics and internal choice or option can be given Paper Structure Q-1 (Attempt any Six Out of Eight: each question must be 5 marks) --- 30 Questions must be covered all possible section. Q-2 (Must be From topics: Introduction to IOS Application Programingand Introduction to Prototyping(6 marks)) Q-3 (Must be From topics:Outlets, Action, Segue(6marks)) Q-4 (Must be From topics:Navigation, animations and MAP (6 marks)) Q-5 (Must be From topics:Explore Interface with Input and screen (4 marks)) Q-6 (Must be From topics:Working with DATABASE (8 marks))	

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Programme	M.Sc IT (MOBILE APPLICATION)				Branch/Spec.	Computer Application		
Semester	III				Version	1.0.0.0		
Effective from Academic Year	2019-20				Effective for the batch Admitted in			June 2018
Subject code	P53A5SEO		Subject Name		SEARCH ENGINE OPTIMIZATION			
Teaching scheme					Examination scheme (Marks)			
(Per week)	Lecture(DT)		Practical(Lab.)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	2	-	2		4	Theory	40	60	100
Hours	2	-	4		6	Practical	20	30	50

Pre-requisites:

Basic Knowledge of World Wide Web. Difference between Portal and Search Engines.

Learning Outcome:

Getting the knowledge of SEO.

Theory syllabus

Unit	Content	Hrs
1	**Basics of SEO** What is SEO? Types of SEO Techniques, Black hat techniques, White Hat techniques, How Search Engine works? Market Research, Keyword Research and Analysis, Keyword opportunity, Competitors Website Analysis, SWOT Analysis of Website, How to Choose Best Keywords, Tools available for Keyword Research	9
2	**Website Design SEO Guidelines and On-page Optimization** Content Research,Content Guidelines, Content Optimization, Design & Layout, XML Sitemap / URL List Sitemap, The Page Title, Meta Descriptions & Meta Keywords, Headings, Bold Text, Domain Names & Suggestions, Canonical Tag, Meta Tags, Images and Alt Text, Internal Link Building, The Sitemap, Invisible Text, Server and Hosting Check, Robots Meta Tag, Doorway Pages, 301 Redirects, 404 Error, Duplicate content	6
3	**Off-Page Optimization** Page Rank, Link Popularity, Link Building in Detail, Directory Submission, Social Bookmark Submission, Blog Submission, Articles Links Exchange, Reciprocal Linking, Posting to Forums, Submission to Search Engine, RSS Feeds Submissions, Press Release Submissions, Forum Link Building, Competitor Link Analysis	7
4	**Analytics and case study** Google Analytics, Installing Google Analytics, How to Study Google Analytics, Interpreting Bars & Figures, How Google Analytics can Help SEO, Advanced Reporting, Webmaster Central & Bing/Yahoo, Open Site Explorer, Website Analysis using various SEO Tools available, Tools for SEO.	8

Practical content	
List of programs on the above mentioned topics as per decided by subject faculty	
Text Books	
1	The Art of SEO: Mastering Search Engine Optimization by Eric Enge, Stephan Spencer, Rand Fishkin, Jessie Stricchiola, O'Reilly Media, Year: 2009, 0596518862,9780596518868
Reference Books	
1	Step By Step Guide to Seo Hardcover – 2018, by Upendra Rana
2	**SEO 2019: Learn search engine optimization with smart internet marketing strategies,** by Adam Clarke
Paper Structure	
	Q-1 (Attempt any SIX Out of EIGHT: each question must be 5 marks) --- 30 Questions must be covered all possible section. **Q-2** (Must be From topics : **Basics of SEO** (8 marks)) **Q-3** (Must be From topics : **Website Design SEO Guidelines and On-page Optimization** (7 marks)) **Q-4** (Must be From topics : **Off-Page Optimization** (8 marks)) **Q-5** (Must be From topics : **Analytics and case study** (7 marks))

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Programme	M.Sc IT (MOBILE APPLICATION)				Branch/Spec.	Computer Application		
Semester	III				Version	1.0.0.0		
Effective from Academic Year	2019-20				Effective for the batch Admitted in	June 2018		
Subject code	P53A6IP1		Subject Name		INDUSTRIAL PROJECT -1			
Teaching scheme					Examination scheme (Marks)			
(Per week)	Lecture(DT)		Practical(Lab.)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	-	-	2		2	Theory	-	-	-
Hours	-	-	4		4	Practical	40	60	100

Pre-requisites:

Software Development Models and concepts, OOPs, Basic DBMS concepts, knowledge of software development life cycle, Testing fundamentals.iphone,android

Learning Outcome:

- Understanding of how system is analysed and implemented using standard techniques.
- Design and Implementation of proposed system
- Testing the system
- Deployment of the system

Theory syllabus

Unit	Content	Hrs
1	Rules: Students are required to develop entire new software system or to enhance/modify functionalities of existing software or to provide customization based on existing technology/framework to fulfil specific requirements. The duration of the project is In-house semester. Students can develop their project individually or in a group of not more than 2 students. Group size can be increased with prior approval of head of institution. The passing standard is 40% in internal and external examination jointly. The detail study of any enterprise application or any major IT infrastructure setup can also be accepted as a project work. The project can be developed in any language or platform but it is required to get approved by the head of the institution. For the purpose of approval, Students have to submit their project titles and proposals with the name of internal and external guides to the Head of Institution In case, if the student proposal is rejected, the revised proposal in the same or other area is required to submit and get it sanctioned. Failing to do this, his/her term will not be granted. The students have to report to the internal guide for at least 4 times during the project life span. Students are required to submit their presentation in soft copy as per format to assigned internal guide at least before 4 days of internal presentation schedule.	8

	The external examiners appointed by the University will give the external marks on the basis of the heads like Presentation, Demonstration, Viva Voce, and Documentation etc. The distribution of marks to different heads may be decided at the time of evaluation of the project but it is expected to have the same distribution. The Internal Guide or Head of the Institution will give the internal marks. These marks may be given on the bases of regular reporting of the student to the internal guide.	
Practical content		
List of programs on the above mentioned topics as per decided by subject faculty		
Text Books		
1	Systems Analysis and Design, by Brijendra Singh , Publisher: New Age International Private Limited; First edition (1 January 2016)	
Reference Books		
1	UML Modelling for Business Analysts: With Illustrated Examples (BusinessAnalystSeries Book 102)	
2	Fundamentals of Object-Oriented Design in UML, by PAGE-JONES. Publisher: Pearson Education; 1 edition	
3	Build iOS Database Apps with Swift and SQLite, by Kevin Languedoc, Apress; 1st ed. edition	