Vivekanand Education Society's Institute Of Technology

Department of MCA

Academic Year: 2024-25

Course Code	Course Name	Contact Hours	Credits Assigned	Examination Scheme			
				Term Work	Practical & Oral		Total
					Practical	Oral	
MCAL34	Mobile Computing Lab	04	02	50	30	20	100

Prerequisite: Basic understanding on java programming and xml

Faculty in charge: Mrs.Ruchi Rautela, Mrs.Vaishali Gatty

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Class: MCA (SEM III, Div A, B)

Reference Books:

1.Wei-Meng Lee ,BEGINNING AndroidTM 4 Application Development ,John Wiley & Sons Crosspoint Boulevard Indianapolis ,ISBN: 978-1-118-24067-0

2 .Reto Meier, Professional AndroidTM Application Development ,Wiley Publishing, ISBN: 978-0-470-56552-0,www.wiley.com

3.Zigurd Mednieks, Laird Dornin, G. Blake Meike,and Masumi Nakamura, Programming Android , Gravenstein Highway North,Sebastopol, CA 95472.ISBN=9781449316648

4.W. Frank Ableson, RobiSen, Chris King, C. Enrique Ortiz, Dreamtech Press Android in action, Third Edition, ISBN 9781617290503

5.Alessandro Biessek Flutter for Beginners: An Introductory Guide to Building Cross - platform Mobile Applications with Flutter and Dart 2 Packt Publishing Ltd. ISBN. 9781788990523

6.Marco L. Napoli Beginning Flutter: A Hands On Guide to App Development John Wiley & Sons,ISBN:-1119550823, 9781119550822

7.Rap Payne Beginning App Development with Flutter: Create Cross-Platform Mobile Apps Apress, ISBN 978-1-4842-5181-2

Web Reference:

1. https://android.google.com
2. https://codelabs.developers.google.com/codelabs/first-flutter-app-pt1/#0
3. https://flutter.dev/docs/reference/tutorials
4. https://flutter.dev/docs/get-started/learn-more
5. https://opensourceforu.com/?s=Flutter
6. https://developer.apple.com/library/archive/referencelibrary/GettingStarted/DevelopiOSAppsSwift/
7. https://developer.apple.com/ios/
8. https://www.apple.com/in/ios/ios-13/

Course Educational Objectives (CEO):

Sr.No	Course Objective
CEO1	Install the framework for mobile app development with all the dependencies
CEO2	Understand the Application development skills of Android and its Components.
CEO3	Learn various Android application with different layouts and rich user interactive interfaces.
CEO4	Develop Android application related to server-less database like SQLITE
CEO5	Develop Android applications using Graphics and animation.
CEO6	Impart a thorough understanding of Dart and Flutter Programming

Course Outcomes (CO)

Sr.No.	Outcome	Bloom Level
CO1	Demonstrate their understanding of the fundamental details of android and its components	**Understanding**
CO2	Implement various android applications using different layouts & rich user interactive interfaces	**Applying**
CO3	Demonstrate their skills of using SQLite database for android application database	**Applying**
CO4	Build android applications using multimedia.	**Applying**
CO5	Demonstrate use of location based services for android application.	**Understanding**
CO6	Demonstrate their ability to develop programs with dart programming and flutter	**Applying**

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Program Educational Objectives (PEOS)

A. To provide students with a solid foundation in the Computing concepts like mathematics, programming, data management, networking etc. This will further enable students to analyze, design and create solutions for any enterprise, national or global in multidisciplinary fields.

B. To inculcate in students a strong ethical and professional attitude which along with effective communication, managerial and teamwork skills will enable success in a broad social context.

C. To prepare the students to excel in an academic environment and make them ready for productive employment through global education and to empower them to develop high end business and innovative skills.

D. To provide broad educational and research experience through interdisciplinary and industrial collaboration programs.

Programme Outcomes (PO) :

PO	Description
PO1	**Computational Knowledge:** Apply knowledge of computing fundamentals, computing specialization, mathematics, and domain knowledge appropriate for the computing specialization to the abstraction and conceptualization of computing models from defined problems and requirements.
PO2	**Problem Analysis:** Identify, formulate, research literature, and solve complex computing problems reaching substantiated conclusions using fundamental principles of mathematics, computing sciences, and relevant domain disciplines.
PO3	**Design /Development of Solutions:** Design and evaluate solutions for complex computing problems, and design and evaluate systems, components, or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.
PO4	**Conduct investigations of complex Computing problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
PO5	**Modern Tool Usage:** Create, select, adapt and apply appropriate techniques, resources, and modern computing tools to complex computing activities, with an understanding of the limitations.
PO6	**Professional Ethics:**

	Understand and commit to professional ethics and cyber regulations, responsibilities, and norms of professional computing practices.
PO7	**Life-long Learning:** Recognize the need, and have the ability, to engage in independent learning for continual development as a computing professional.
PO8	**Project management and finance:** Demonstrate knowledge and understanding of the computing and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO9	**Communication Efficacy:** Communicate effectively with the computing community, and with society at large, about complex computing activities by being able to comprehend and write effective reports, design documentation, make effective presentations, and give and understand clear instructions.
PO10	**Societal and Environmental Concern:** Understand and assess societal, environmental, health, safety, legal, and cultural issues within local and global contexts, and the consequential responsibilities relevant to professional computing practices.
PO11	**Individual and Team Work:** Function effectively as an individual and as a member or leader in diverse teams and in multidisciplinary environments.
PO12	**Innovation and Entrepreneurship** Identify a timely opportunity and use innovation to pursue that opportunity to create value and wealth for the betterment of the individual and society at large.

Program Specific Objective (PSO)

PSO1:

The ability to develop and apply computer based applications of varying complexity and domains using standard practice.

PSO2:

Demonstrate the ability to use the latest technology and tools in developing the software thus helping our product to be Employable and become Successful Entrepreneurs.

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LAB PLAN -

Week	Topics of Coverage	Reference	CO Mapped	Expected % attainment of CO	Rubrics
1	Android program using Various UI Components	1,2	CO1	70%	Completion of Lab exercise and Viva/ Quiz End Semester Examination
2	Android program using different layouts and views	1,2	CO1,CO2	70%	Completion of Lab exercise and Viva/ Quiz End Semester Examination
3	Android program based on Intents	1,2	CO2	70%	Completion of Lab exercise and Viva/ Quiz End Semester Examination
4	Android program to perform CRUD operation using SQlite DB	1,2	CO2,CO3	70%	Completion of Lab exercise and Viva/ Quiz End Semester Examination
5	Android program using shared preference ,Internal and External storage	1,2	CO2,CO3	70%	Completion of Lab exercise and Viva/ Quiz End Semester Examination
6	Android program to work with graphics and animation	1,2	CO2,CO4	70%	Completion of Lab exercise and Viva/ Quiz End Semester Examination
7	Android program to work with google maps and location	1,2	CO2,CO5	70%	Completion of Lab exercise and Viva/ Quiz End Semester Examination
8	Android program to work with images and videos	1,2	CO2,CO4	70%	Completion of project exercise and Viva/ Quiz
9	Android program based on Rest API	1,2	CO2,CO5	70%	Completion of project exercise and Viva/ Quiz End Semester Examination
10	Flutter program using layout	5,6	CO6	70%	Completion of project exercise and Viva/ Quiz

	,widget and state management				End Semester Examination
11	Flutter program to work with SQlite Database	5,6	CO6	70%	Completion of project exercise and Viva/ Quiz End Semester Examination

Suggestions by Group Advisor	

CO – PO-PSO Mapping:

	PO1	PO2	PO3	PO5	PSO1	PSO2
CO1	√	– –	√	--	√	--
CO2	– –	√	√	--	√	--
CO3	– –	– –	√	√	√	√
CO4	– –	√	√	√	√	√
CO5	– –	√	√	√	√	√
CO6	– –	√	√	√	√	√

Instructions for Assessment:

Term Work: Will be based on Continuous Assessment

Laboratory work will be based on the syllabus with a minimum 10 experiments.

Experiments 40 marks Attendance 10 marks

Practical will be evaluated by the subject teacher and documented according to a rubric

End Semester Practical Examination:

Practical and oral examination will be based on the suggested practical list and entire syllabus.

Lab Assignment/ Assignment Marking Scheme: -

Sr.No	Marks (10)	Remarks

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01	10	On date of DOS & Good Presentation
02	08	After one week of DOS & Good Presentation
03	06	After two weeks of DOS.
04	00	Late submission

(Faculty in Charges)

Mrs.Ruchi Rautela/Mrs.Vaishali Gatty