National Institute of Technology Meghalaya
An Institute of National Importance

CURRICULUM

Programme	**Master of Computer Applications**		Academic Year of Regulation		**2024-25**
Department	**Computer Science and Engineering**		Semester		**IV**

Course Code	Course Name		Pre-Requisite	Credit Structure				Marks Distribution			
				L	T	P	C	INT	MID	END	Total
CA574	**App Development**			**2**	**0**	**0**	**2**	**50**	**50**	**100**	**200**

Course Objectives	To Understand the core components of Android development			Course Outcomes	CO's	Statement	Bloom's Taxonomy
	To Explore advanced Android topics and learn how to manage data persistently, perform background operations, and communicate effectively between app components.				CA574.1	Able to develop Android apps using activities, layouts, and views.	Understand
					CA574.2	Able to implement user-friendly and accessible interfaces.	Create
	To Gain proficiency in user interaction principles and be able to design responsive and accessible applications that adheres to best practices in user experience.				CA574.3	Able to handle data storage, background tasks, and notifications.	Evaluate
	To Learn the process of deploying Android applications and understand strategies for app monetization.				CA574.4	Able to integrate Firebase for authentication, database, and cloud messaging	Apply

COs	Mapping with Program Outcomes (POs)												Mapping with PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CA574.1		1	2	2	3	2		1	1					1	1
CA574.2		1		3		1		1		2				1	1
CA574.3	1			1	2		1		2				1		1
CA574.4			1	2	2	3	1						1	1	2
CA574	1.00	1.00	1.50	2.00	2.33	2.00	1.00	1.00	1.50	2.00			1.00	1.00	1.25

SYLLABUS

No.	Content	Hours	COs
I	Introduction to mobile computing, installing of required software and preparing the working environment, creating your first Android Application. Layouts, Views, Resources, Activities, Intents, Background tasks, Connecting to the Internet, Fragments, Preferences	5	**CA574.1**
II	User Interaction – input, menu items, custom views, User Experience – themes and styles, material design, adaptive layouts, accessibility, localization, debugging the UI.	5	**CA574.2**
III	Data Management & Background Processing: Storing Data,SQLite database, Sharing Data, content resolvers and providers, loaders to load data, Services, background work, alarms, broadcast receivers.	6	**CA574.3**
IV	Backend Integration (Firebase & APIs): Firebase Authentication, Firestore, Firebase Cloud Messaging, REST API integration.	7	**CA574.4**
V	Notification, widgets, transferring data efficiently, publishing app, Multiple form factors, sensors, Google cloud messaging, monetizing your app	5	**CA574.4**
	Total Hours	28	

Essential Readings

1. Phillips,Stewart, Hardy and Marsicano, "Android Programming : Big Nerd Ranch Guide", 5th Edition, Big Nerd Ranch Guides, 2022

2. John Horton, "Android Programming for Beginners", 3rd Edition, Packt Publishing ,2021

Supplementary Readings

1. Dawn Griffiths and David Griffiths, "Head First Android Development: A Brain-Friendly Guide", 3rd Edition, Shroff/O'Reilly, 2021

2. E Hellman, "Android Programming – Pushing the limits by Hellma", 1st Edition, John Wiley & Sons Inc, 2013