

<b>Course Code</b>	<b>Course Title</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>			
BITE409L	Mobile Application Development	3	0	0	3			
<b>Pre-requisite</b>	<b>NIL</b>	<b>Syllabus version</b>						
		1.0						
<b>Course Objectives:</b>								
<ol style="list-style-type: none"> <li>1. To impart fundamental concepts of Mobile Application Development</li> <li>2. To design user interfaces for interacting with apps and triggering actions</li> <li>3. To identify options to save persistent application data</li> </ol>								
<b>Course Outcomes:</b>								
<ol style="list-style-type: none"> <li>1. Determine the design and development principles for mobile applications</li> <li>2. Implement interactive user interfaces that work across a wide range of devices</li> <li>3. Create, test and debug mobile application by setting up a development environment</li> <li>4. Analyse the Interface operations</li> <li>5. Propose methods for storing and retrieving data in mobile applications</li> <li>6. Analyse performance of mobile applications and understand the role of permissions and security</li> </ol>								
<b>Module:1</b>	<b>Introduction to Mobile Application</b>	<b>6 hours</b>						
History of mobile devices -Mobile ecosystem -Designing for context - Developing a Mobile Strategy - Mobile Information Architecture - Mobile Design -Types of mobile application.								
<b>Module:2</b>	<b>Integrated Development Environment</b>	<b>6 hours</b>						
Exploring Development Environments - Installation - Creating a New Project – Architecture - The Manifest File- Activity Class – Types of Activity – Lifecycle of Activity.								
<b>Module:3</b>	<b>Application Essentials</b>	<b>6 hours</b>						
Components: Service, Broadcast Receiver, Content Provider - Application resources and assets -Resource Management - Managing Intents and Intent Filters.								
<b>Module:4</b>	<b>UI Design &amp; Operations</b>	<b>7 hours</b>						
UI Elements - View Class - Creating Custom Views - Using Layout - Layout types – Fragments - Dialogs – Adapters: Listview, Gridview – Menu and its types.								
<b>Module:5</b>	<b>Hybrid Mobile Applications</b>	<b>6 hours</b>						
Native vs. Hybrid Mobile Applications – Building Blocks of Hybrid Applications – Development and Packaging Frameworks- Creating Hybrid Mobile Applications.								
<b>Module:6</b>	<b>Services and Data Storages</b>	<b>6 hours</b>						
Services – Service Lifecycle – Communicating with Services - Preferences- External storage – SQLite database – Firebase.								
<b>Module:7</b>	<b>Securing Mobile Applications</b>	<b>6 hours</b>						
Security Concepts: Signatures and Keys, Permissions, Protecting User data – Client-side Data Encryption – Key Chain Management – Device Management API.								

<b>Module:8</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
	<b>Total Lecture hours:</b>	<b>45 hours</b>
<b>Text Book</b>		
1.	J F DiMarzio, "Beginning Android Programming with Android Studio", 4 <sup>th</sup> Edition, Wiley India Pvt. Ltd, 2016.	
<b>Reference Books</b>		
1.	Erik Hellman, "Android Programming – Pushing the Limits", 1 <sup>st</sup> Edition, Wiley India Pvt. Ltd., 2014.	
2.	Brian fling, Mobile Design and Development, 2009, 1 <sup>st</sup> Edition, O'Reilly Media.	
3.	Google Developer Training, "Android Developer Fundamentals Course – Concept Reference", Google Developer Training Team, 2017. <a href="https://www.gitbook.com/book/google-developer-training/android-developerfundamentals-course-concepts/details">https://www.gitbook.com/book/google-developer-training/android-developerfundamentals-course-concepts/details</a> (Download pdf file from the above link)	
4.	Dawn Griffiths and David Griffiths, "Head First Android Development", 1 <sup>st</sup> Edition, O'Reilly SPD Publishers, 2015.	
5.	Mahesh Panhale, "Beginning Hybrid Mobile Application Development", 1 <sup>st</sup> Edition, Apress, 2016.	
Mode of Evaluation: Continuous Assessment Tests, Assignment, Quiz, Final Assessment Test		
Recommended by Board of Studies	12-10-2022	
Approved by Academic Council	No. 68	Date 19-12-2022