

**Maulana Abul Kalam Azad University of Technology, West Bengal**  
*(Formerly West Bengal University of Technology)*  
**Syllabus for B. Sc. In Gaming & Mobile Application Development**  
**(Effective for Academic Session 2019-2020)**

**SEMESTER-V**

**Paper: Android Game Development**  
**Code: BGD - 501**  
**Contacts Hours / Week: 1T+3P**  
**Credits: 4**

Units	Course Content
Unit 1	Controlling smartphone , Smartphone structuresm, Building for Android with controls and movement How to build 3D game apps using Android SDK, NDK, and OpenGL ES Which Android SDK and NDK APIs are most useful for 3D game development How to get a 3D Math Review for game development How to build 3D graphics using OpenGL ES
Unit 2	Motion Patterns: How to create various motion patterns ,How to set up a game environment, including gravity grid, sounds, and heads-up display, How to create the characters, including the player and its enemies or targets, How to develop a rich menu system with high score table Building a Game Engine, Building Game Levels with Collision, Virtual Cameras, Using the Android Development Environment
<b>Suggested Readings:</b>	
1. Beginning Android 3D Game Development - Robert Chin 2. <a href="http://blaqueyard.com/download/Beginning%20Android%20C++%20Game%20Development.pdf">http://blaqueyard.com/download/Beginning%20Android%20C++%20Game%20Development.pdf</a>	

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**Paper: iOS Game Development**  
**Code: BGD - 502**  
**Contacts Hours / Week: 2T+3P**  
**Credits:5**

Units	Course Content
Unit 1	Controlling iOS , iOS structure, Building for iOS with controls and movement How to build 3D game apps using iOS SDK, XCode, and OpenGL ES Which iOS SDK and APIs are most useful for 3D game development iOS Game Development Platform Introduction iOS Game Development History Comparing with Other Platform Tools, Technologies and Capabilities Xcode
Unit 2	Motion Patterns: How to create various motion patterns ,How to set up a game environment, including gravity grid, sounds, and heads-up display, How to create the characters, including the player and its enemies or targets, How to develop a rich menu system with high score table Building a Game Engine, Building Game Levels with Collision, Virtual Cameras, Using the Android Development Environment
<b>Suggested Readings:</b>	
1. <a href="http://1.droppdf.com/files/ejGQp/game-development-with-swift.pdf">http://1.droppdf.com/files/ejGQp/game-development-with-swift.pdf</a> 2. <a href="http://ptgmedia.pearsoncmg.com/images/9780132928625/samplepages/0132928620.pdf">http://ptgmedia.pearsoncmg.com/images/9780132928625/samplepages/0132928620.pdf</a>	

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**Paper: Apple Game Development Framework**

**Code: BGD - 503**

**Contacts Hours / Week: 2T+2P**

**Credits: 4**

<b>Units</b>	<b>Course Content</b>
Unit 1	Xcode . Elements of Sprite Kit, Scene ,Nodes ,Actions , Features of Sprite Kit , Particle Emitter Editor , Texture atlas generator, Shaders , Lighting and Shadows , Simulating Physics , The Game Loop
Unit 2	INTRODUCTION TO LAPLAND Game Description, Art and Sound, Scenes in Sprite Kit, Working with Sprites , Physics in Sprite Kit, Animation and Texture, Controlling the Game , Gameplay Kit.
<b>Suggested Readings:</b>	
1.	

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**Paper: SDK**  
**Code: BGD - 504**  
**Contacts Hours / Week: 2T+2P**  
**Credits: 4**

<b>Units</b>	<b>Course Content</b>
Unit 1	What is SDK, How SDK works Errors & Debugs Building the UI & attach with main game play with the SDK. SDK integration for ads
Unit 2	How a game makes money – Publishers point, How to attract users, Branding strategy. There are 300 plus local ap stores, how to tag them while publish
<b>Suggested Readings:</b>  1. <a href="https://developers.google.com/admob/unity/start">https://developers.google.com/admob/unity/start</a> 2. <a href="https://www.youtube.com/watch?v=BwVYUR0UUhk">https://www.youtube.com/watch?v=BwVYUR0UUhk</a>	

**Internship & Lab Making (Making of Full Length Android and iOS Game)**  
**Code: BGD - 505**  
**Contacts Hours / Week: 3P**  
**Credits: 3**