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)

<u>**SEMESTER-II**</u>

Paper: Making Game Codes
Code: BGD – 201
Contacts Hours / Week: 1T+3P
Credits:4

Units	Course Content
Unit 1	Fixed-Sized Arrays. Using the While Loop with Arrays, Setting Array Values, Getting Array Values.ZombieData.Multidimensional Arrays. How to make A Puzzle Board. Timers
Unit 2	Working with platform runner games (Push Gitignore Pull Contributors) Platform runner game mechanics & tools (Single screen movement, Classification of early platformers, Scrolling movement, Second-generation side-scrollers, The third dimension, True 3D)

Suggested Readings:

1. http://file.allitebooks.com/20160708/Learning%20C-%20Programming%20with%20Unity%203D.pdf
2. https://gameanalytics.com/blog/how-to-perfect-your-games-core-loop.html
3. http://www.allitebooks.in/learning-c-programming-unity-3d/

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Paper: Making FPS Game
Code: BGD – 202
Contacts Hours / Week: 1T+2P
Credits:3

Units	Course Content
Unit 1	What is FPS First person shooting game structure (Multiple Args, Using Args.Adding Lighting, Spawn Points, and the End Zone, Designing the First Room, Designing the Second Room)
Unit 2	Collision Detection (Push Gitignore Pull Contributors), C# code on FPS Physics and logic on FPS(Single screen movement, Classification of early platformers, Scrolling movement, Second-generation side-scrollers, The third dimension, True 3D)

Suggested Readings:

1. https://www.youtube.com/watch?v=Sqb-Ue7wpsI
2. https://www.youtube.com/watch?v=0fGB2H1AGP8

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Paper: AI in Game
Code: BGD – 203
Contacts Hours / Week: 1T+2P
Credits:3

Units	Course Content
Unit 1	All about AI in game. AI for saving labor cost,Content generation for characters, AI invents new games, Enhancing Gaming Experience with AI, Develop a smart and human-like NPCs to better interact with gamers; Predict human players' behaviors that lead to improved game testing and game design; Classify their behaviors to enable the personalization of the game; Discovery frequent patterns or sequences of actions to determine how a player behaves in a game. Prototyping and Pitching
Unit 2	How To Perfect Your Game's Core Loop (Enter a new room, Kill all the enemies, Get rewards, Build upon a strong theme)

Suggested Readings:

1. https://www.amazon.in/Neural-Networks-Keras-Cookbook-leveraging/dp/1789346649/ref=sr_1_1?keywords=artificial+intelligence+for+game+development&qid=1559290714&s=books&sr=1-1
2. https://www.amazon.in/Artificial-Intelligence-Games-Ian-Millington/dp/0123747317/ref=sr_1_2?keywords=artificial+intelligence+for+game+development&qid=1559290714&s=books&sr=1-2
3. https://www.amazon.in/Unity-Artificial-Intelligence-Programming-believable/dp/1789533910/ref=sr_1_4?keywords=artificial+intelligence+for+game+development&qid=1559290714&s=books&sr=1-4

Paper: Database in Game
Code: BGD – 204
Contacts Hours / Week: 1T+2P
Credits:3

Units	Course Content
Unit 1	All about DB in game. Content generation for objects, database invents new games, Enhancing Gaming Experience with DB and tore data Predict human players' behaviors that lead to improved game testing and game design; Classify their behaviors to enable the personalization of the game and save in server.
Unit 2	How To Perfect Your Game's Core Storing system (Enter a new room, Kill all the enemies, Get rewards, Build upon a strong theme)
Suggested Readings:	
1. https://www.reddit.com/r/gamedev/comments/28td8c/how_are_databases_used_in_games/	

Paper: 3D Character Development Introduction
Code: BGD – 205
Contacts Hours / Week: 1T+2P
Credits:3

Units	Course Content
Unit 1	Working with 3D, games Rigidbody, physics, User input and UI, Balancing games, analyzing games, the MDA framework Low poly character modelling.
Unit 2	Setting Up the Image Reference, Camera and the Light , Background Images, Starting to Model the Face, Blocking the Nose and Lips, Adding the Subdivision Modifier
Suggested Readings: 2. https://cgi.tutsplus.com/tutorials/female-character-modeling-in-blender-part-1--cms-19723 3. https://www.youtube.com/watch?v=uGg04oAm4C8 4. https://www.youtube.com/watch?v=sHN1_GBwqcw 5. https://www.youtube.com/watch?v=spi4lGxnMZg	

Internship & Lab Making Causal 2D Game
Code: BGD – 206
Contacts Hours / Week: 4P
Credits: 4