

SENIOR CURRICULUM

Module

1

Game Design and Basic App Development-GameLab

Basic App in GameLab

Students learn basics of programming while designing simple and complex

- Drawing Tabs Variables
- Creating Shapes Random Numbers

Rainbow

Snake Create a game to generate new behaviour

Module

2

Game Design Process & UI/UX Design

Game Animation

Students learn to implement animations in scenes

- Velocity Counter Pattern
- Collision Detection Sprite Movement

Side Scroller

Create a game with simple player controls

Module

3

Physical Computing with Hardware

Mobile App Development: AppLab

Students will learn to create single screen apps

- Designing screen with code LED programming
- Set & Get property Event Handler

Emotion Machine

Create a single screen app using AppLab

GameLab: All about Graphics

Students will learn graphic tools to improve app interface

- Sprites Text Commands
- Sprite properties Text Properties

Solar System

Create an app to understand the movements of celestial bodies

SpaceTech Simulations

Students will learn to build interactive space simulation apps.

- Velocity Counter Pattern
- Collision Detection Sprite Movement

Gravity App

Students will simulate the effect of gravity on free falling objects on different planets

Adafruit's Circuit Playground

Students will build apps using circuit playground as output

- Input programming Properties
- Board Events Sliders & Change events

Motorcycle App

Create an app using circuit playground

Basic Animation

Students learn to associate movements and animations to various scenes

- Draw Loop Booleans
- Sprite movement Conditionals

Animator App

Plan and create an animated scene

Game Design Process

Students will learn to design games using step by step game design guide

- Defining components Paper Prototyping
- Implementation of prototype Testing the final outcome

HelpDaisy

BunnyChef Design your own game as per the process

Sensor Programming

Students will build apps via sensors input

- Analog sensor input Functions & Logic input
- Sensor testing Screen Design

Emoji Race

Create your own multiplayer game

Input at Runtime

Students will create multiple apps with user input at runtime

- Keyboard Input Conditionals
- Other Forms of Input Logic statements

FlowerVase

Create an app with interactive UI

Utility App

Students will learn to build advanced utility app

- Arrays with Hardware Loops
- Events and functions Frequency

Piano App

Build an app to play a piano

Professional App Development

Students will learn to build and deploy apps

- Project plan & design Button Circuits design
- Circuit & Logic Sensor Events

Accelerometer

Create a real world application

