Course Syllabus:

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| --- | --- | --- | --- | --- |
| **Months** | | **Weeks** | **Lecture** | **Hours** |
| **2** | **February** |  |  |  |
|  |  | **1** | Unity 3D setup and Introduction | 4 |
|  |  | **2** | Unity 2D and 3D Objects and Environments   * 2D / 3D Game objects * Materials and textures * Lights and rendering | 4 |
|  |  | **3** | Unity: 3D objects, Nesting Components, and 2D Sprites, Prefabs   * Simple 3D Modeling using standard unity game objects * Tile Maps and 2D Sprites * Unity Asset Store |  |
|  |  | **4** | Unity Scripting: C# Language   * C# language Introduction and Syntax * C# language for Unity * (Simple movements, rotation, and Algorithms) | 4 |
| **3** | **March** |  |  |  |
|  |  | **5** | **Unity Scripting: C# Language**   * Controlling movements with keyboard * Controlling game objects components * Mouse Events * Prefabs |  |
|  |  | **6** | **Unity 3D – Sample Project 1**   * Building a full game scene of battle field for Tanks |  |
|  |  | **7** | **Colliders and Triggering Events**   * 2D / 3D Colliders * Adding Colliders to Game Objects * Applying gravity to Game Objects * Controlling Colliders with C# scripts |  |
|  |  | **8** | **Unity 2D – Sample Project 2**   * Flappy bird Like Game |  |
| **4** | **April** |  |  |  |
|  |  | **9** | **Unity Physics**   * Physics Overview * Colliders and Rigid Bodies * Unity Hinge Joint * Unity Wheel Collider |  |
|  |  | **10** | **Unity Animation**   * Animation System Overview * Animations from external sources * Creating a new Animation Clip * Animator Controllers |  |
|  |  | **11** | **Unity UI:**   * Add custom user interfaces to your game. * Incorporate animations into your user interfaces. * Integrate Unity UI into a working game. |  |
|  |  | **12** | **Unity 3D – Sample Project 3**   * Bobblehead |  |
| **4** | **May** |  |  |  |
|  |  | **13** | **Unity Sounds and Particle Systems**   * Sounds System Overview * Particle System Overview |  |
|  |  | **14** | **Navigation and Path Finding**   * Navigation System in Unity * Building a Nav Mesh * Nav Mesh Building Components |  |
|  |  | **15** | **Unity 3D – Sample Project 4**   * FPS Project (Part 1) |  |
|  |  | **16** | **Unity 3D – Sample Project 4**   * FPS Project (Part 2) |  |