Game Design Requirements

Your team will work during the semester to create a video game. The game that you create must be implemented in Unity and be a 3D game demonstrating the learning objectives of the class. More specifically, your game must be a *Game Feel* game which consists of: predominantly Real-time Control, a Simulated Space, and Polish.

We will cover Game Feel in lecture, but more details are available here: https://www.gamasutra.com/view/feature/130734/game_feel_the_secret_ingredient.php

Further interaction and genre restrictions are:

- No non-continuous, indirect locomotion such as point-and-click (see Game Feel)
- No turn-based gameplay (see Game Feel)
- No grid/tile system of limited or discrete movement (see Game Feel)
- No 2D games
- No 3D side-scrollers where physics simulation and/or character movement is limited to a 2D plane (e.g. Unity's 2D physics). You can however move the camera along a plane facing the side or top of a **3D character** in a **3D environment**.
- No first-person shooters (FPSs) or variants with first-person perspective
- No tower defense games. (This restriction is based on past experience with teams having difficulty implementing all the necessary functionality and having time to balance gameplay.)
- In addition to the above, there are some implied genre restrictions or at least some game play concepts that may be difficult to use for the project. For instance, a game that is exclusively outer space combat may not be able to meet interactive environment and AI path planning requirements.

Summary of Assessment Criteria:
Please refer to the final project rubric for detailed project requirements. The following is a partial summary.

1.) Your game must be implemented in Unity.
2.) Your game must consist of a 3D world.
3.) Your game must utilize a character/vehicle controlled by the player with engaging animations that react to the player's inputs. This might mean a humanoid skeletal animated character animated via Mecanim with blending between different animations based on the player's inputs. Or perhaps a vehicle with moving wheels controlled by a throttle input and moving suspension and a driver's head that turns to see direction of travel, etc. Something simple like BB8 of the Star Wars universe can possibly work provided that considerable development effort is undertaken to create dynamic and expressive character movement (e.g. leaning, head bobbing,

looking at points of interest, comical animation in response to colliding with obstacles, etc.). This character/vehicle must be in view of the player (no first-person shooters). It's highly recommended that you support a game controller such as a PS4 controller for analog style control.

4.) Your game must implement a real-time steering, path planning, and state-machine based AI (or similar reactive agent). The AI need not be an enemy to the player. For instance, the AI could control a non-hostile NPC. However, the AI interactions with the player *must be critical to the gameplay experience*.
5.) Your game must utilize rigid body physics simulation with interactive objects (not just colliding with static obstacles of the world's boundaries and platforms). Your environments must include rich interaction that impacts how the player performs actions that are key to achieving goals in the game world.
6.) Your game must be a *Game Feel* game. Your game needs rich Game Feel mechanics and a supporting environment. (dynamic and responsive audio, environmental effects, responsive controls, etc.) Please refer to the Game Feel lectures, slides, book, etc., for further details.
7.) Your game must attempt to provide interesting choices for the player to make during gameplay
8.) Your game must include engaging and polished starting/resolving actions, pause in gameplay, configuration, credits, licenses, etc., via GUI menu
9.) WARNING: Be wary of overly ambitious design concepts. Keep in mind the very short duration in which you and your team have to complete the project.
10.) RECOMMENDED: Focus on developing a unique and compelling *gameplay* experience. Place more *emphasis on real-time character/vehicle interaction* with the *simulated space* and less on story/setting/artistic design. Also, try to avoid situations where you take control of the character away from the player (e.g. complicated in-game computer terminals).

Implementation

You must implement your game in Unity with the specified software version requirements (see Syllabus). Media assets can be created with any tools you wish to use. Or you can use existing third-party assets provided that you document their use.

<u>Regarding third-party technologies:</u>
You may use third-party resources for media (textures, models, animations, sounds, etc.), but you can't use all-in-one assets that are completely implemented for game play. Such assets are sometimes billed as "make a game without writing any code", such as Unity's 3dGameKit. For instance, a character that includes everything needed to just drop into a scene and immediately work for player control is not acceptable. Please refer to the rubric for further details.

If there is a particular asset that you want to use but is part of an all-in-one package, you can request an exception to the above policy by contacting your TA for review. You will also need to clearly document what is provided and what is your implementation.