**Course Project Ideas**

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Timothy’s notes to Taka:

* Aligned the spaceship with camera and movement properly
* Auto set to autoMouse movement and WASD movement
* Left and Right motion are correct now
* Changed way to change brightness to “Y” and “U”
* “SPACE” and “LEFT\_SHIFT” goes Up and Down
* Collision checks changed from 2D to 3D
* When moving Left or Right or Up or Down, tilt spacecraft to that direction
* When moving forward, draw spacecraft a bit backwards, and vice versa
* Dashing changed from “SPACE” to “F”

Ongoing:

* Fake Skybox
* Add Sun back (with horizontal ring rotation)
  + Sun Light
* Add shooting and projectile collisions
* Remove dashing by UFOs
* UFOs spawn according to a ring of SPHERE instead of circle
* UFOs move towards tiger also in Y direction
* Everything is too big: scale down most of the stuff
* Trying to make 3D movements: no limit
* Fire behind spaceship

TAKA

* Add platform
* (Add other space vehicles)
* Add lighting
* Engine Start

**Requirements:**

1. Space
2. Planet
3. Meteorites around (at least 200 random floating rocks)
4. Multiple Space Vehicles near planet
5. Object loading
6. Transformation matrix
7. Lighting
8. Texture Mapping
9. Skybox
10. Shader
11. Interaction
12. The planet and the local space vehicles should do **self-rotation** all the time. (Make UFO)
13. The local space vehicles should move in the horizontal axis all the time.
14. Skybox
15. Keyboard interaction – Light Parameters
16. 3rd-person player view
17. Do **normal mapping** for the planet
18. Mouse. Use a mouse to control the rotation of the spacecraft. For example, if you move the mouse to the left, the head of the spacecraft will turn left.
19. **Up, down, left, right** or {WASD + Space/Shift for Up and Down}
20. Other Light sources
21. Other meaningful objects
22. Meaningful interactions (such as collision/shooting)

Scenes:

**Starting Scene (Where the Spaceship launches)**

**Play Scene**

**- Space**

**- Planet(s)**

**- Asteroid Ring**

**- Spaceship(Main)**

**- Enemy Spaceships**

**- Missiles**

**Radar Position**

**Anchored buttons (for pause menu) and Stats**

**Upgradable Stats**

- HP

- Energy

**Types of Upgrades**

- Refillable Shield

- Homing Missiles: Degree of Homing

- Explosion Radius

- Number of Missiles

**Player Input**

- Multi-input

**Enemy AI**

- Homing Missiles (Low degree of Homing)

- Illusion Spaceships (Fake clones)

- Shielding when attacked

- Mothership with high HP?

Collectables: For upgrading Spaceship

**Try to input sound? Voice lines and Text boxes (2D obj Textures for characters?)**