
GRAVITY SHIFT - PROJECT DELIVERABLES CHECKLIST

Student: Xiangfeng Ding Course: CMP-6056B/CMP-7042B Game Development Submission
Deadline: 04/Mar/2026 15:00 GitHub Repository: <https://github.com/Xiangfeng-Ding/GravityShift>

PART 1: GAME DESIGN REPORT (40%)

Report Requirements (8 pages body text max, 10 pages appendix max):

[✓] Game Overview (18% of report grade)

- [✓] Core concept explained
- [✓] Game genre identified (3D Platform Puzzle)
- [✓] Target audience defined (PC gamers, puzzle enthusiasts)
- [✓] Unique features listed (6-directional gravity, energy system, FSM AI)

[✓] Game Design Details (18% of report grade)

- [✓] Game story (Dr. Ding's facility malfunction)
- [✓] Character description (Special agent with gravity device)
- [✓] Visual style (3D low-poly/stylized)
- [✓] Level design (5 levels with progression)
- [✓] Controls documented (WASD, Mouse, G+Arrows, Space)

[✓] Prototype Description (10% of report grade)

- [✓] Working element 1: Gravity switching system with energy management
- [✓] Working element 2: Enemy AI with Finite State Machine
- [✓] Additional elements: Crystal collection, checkpoints, moving platforms, pressure plates, energy barriers, multi-language UI
- [✓] Development steps explained
- [✓] Functionality demonstrated

[✓] GitHub Usage (5% of report grade)

- [✓] Repository created: <https://github.com/Xiangfeng-Ding/GravityShift>
- [✓] Meaningful version control (8 structured commits)
- [✓] Clear commit messages with categories
- [✓] Organized folder structure
- [✓] Proper .gitignore for Unity

[✓] Quality and Clarity (7% of report grade)

- [✓] Professional writing style
- [✓] Logical flow and structure
- [✓] Clear formatting
- [✓] Technical accuracy

GitHub Link to Include in Report: <https://github.com/Xiangfeng-Ding/GravityShift>

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PART 2: VIDEO DEMO (40%)

Video Requirements (5 minutes maximum):

[] Prototype Demonstration (20% of video grade)

- [] Show gravity switching in **all 6** directions
- [] Demonstrate energy system (depletion and regeneration)
- [] Show crystal collection
- [] Demonstrate checkpoint system
- [] Show enemy AI behavior (patrol, chase, attack)
- [] Demonstrate moving platforms
- [] Show pressure plate mechanics
- [] Demonstrate energy barriers
- [] Show level completion **flow**

[] Explanation of Game Elements (10% of video grade)

- [] Explain gravity switching controls (Hold G + Arrows)
- [] Explain energy management system
- [] Explain enemy AI states (Idle/Patrol/Chase/Attack/Return)
- [] Explain level objectives and win conditions
- [] Explain scoring system

[] Video Quality (10% of video grade)

- [] **Clear video** resolution (**1080p** recommended)
- [] Stable frame rate
- [] **Clear audio** narration
- [] Logical demonstration **flow**
- [] Professional presentation

Video Recording Tips:

- Use OBS Studio or Unity Recorder for screen capture
- Record at 1920x1080 resolution, 60 FPS
- Use external microphone for clear narration
- Plan demonstration sequence beforehand
- Show most impressive features first
- Keep within 5-minute time limit
- Upload to YouTube (unlisted or public)
- Test video link before submission

Suggested Video Structure: 0:00-0:30 - Introduction and game overview 0:30-1:30 - Gravity switching demonstration 1:30-2:30 - Enemy AI and combat mechanics 2:30-3:30 - Puzzle

mechanics (platforms, barriers, pressure plates) 3:30-4:30 - UI system and multi-language support 4:30-5:00 - Conclusion and future plans

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PART 3: GAME IDEA DISCUSSIONS (20%)

Lab Discussion Requirements:

[] Week 3 Discussion (7%)

- [] Attend game lab in Week 3
- [] Present initial game concept
- [] Discuss gravity switching mechanic
- [] Receive feedback from teaching staff
- [] Document feedback received

[] Week 5 Discussion (7%)

- [] Attend game lab in Week 5
- [] Show progress on implementation
- [] Demonstrate working prototype
- [] Discuss challenges encountered
- [] Receive additional feedback

[] Feedback Application (6%)

- [] Incorporate feedback into design
- [] Document changes made based on feedback
- [] Show evidence in report or video demo

Note: Failure to attend labs will result in loss of marks.

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TECHNICAL DELIVERABLES CHECKLIST

Unity Project Structure:

[✓] Core Scripts Implemented

- [✓] `PlayerController.cs` (Movement and input)
- [✓] `GravityController.cs` (6-directional gravity switching)
- [✓] `PlayerEnergy.cs` (Energy management system)
- [✓] `GameManager.cs` (Game flow control)
- [✓] `UIManager.cs` (UI updates and display)
- [✓] `AudioManager.cs` (Audio playback)
- [✓] `LanguageManager.cs` (Multi-language support)
- [✓] `EnemyAI.cs` (Enemy controller)
- [✓] `EnemyState.cs` (FSM state definitions)
- [✓] `CrystalPickup.cs` (Collectible crystals)
- [✓] `Checkpoint.cs` (Save points)
- [✓] `EnergyBarrier.cs` (Unlockable barriers)
- [✓] `MovingPlatform.cs` (Moving platforms)
- [✓] `PressurePlate.cs` (Mechanism triggers)
- [✓] `HazardZone.cs` (Death zones)
- [✓] `ExitPortal.cs` (Level exit)
- [✓] `MainMenu.cs` (Main menu controller)
- [✓] `PauseMenu.cs` (Pause menu controller)
- [✓] `HUDController.cs` (HUD updates)

[✓] Project Configuration

- [✓] Unity 2022.3 LTS version
- [✓] 3D Built-in Render Pipeline
- [✓] ProjectSettings configured
- [✓] Build settings configured
- [✓] Input manager configured
- [✓] Tag manager configured
- [✓] Layer collision matrix set up

[✓] GitHub Repository

```
[✓] Repository created and public/private as required
[✓] .gitignore properly configured
[✓] Structured commit history (8 commits)
[✓] Clear commit messages
[✓] All scripts committed
[✓] Project settings committed
[✓] README documentation included
```

[] Unity Scenes (To be completed in Unity Editor)

```
[ ] MainMenu scene with UI
[ ] Level1_Tutorial scene
[ ] Level2_Platforms scene
[ ] Level3_Hazards scene
[ ] Level4_Mechanisms scene
[ ] Level5_Final scene
```

[] Prefabs (To be created in Unity Editor)

```
[ ] Player prefab with all components
[ ] Crystal prefab
[ ] Checkpoint prefab
[ ] Enemy prefab with patrol route
[ ] Platform prefabs (static and moving)
[ ] Hazard prefabs
[ ] Energy barrier prefab
[ ] Exit portal prefab
```

[] UI Elements (To be created in Unity Editor)

```
[ ] Main menu UI
[ ] HUD (energy bar, crystal counter, timer)
[ ] Pause menu
[ ] End level screen
[ ] Settings panel with language dropdown
```

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TESTING VERIFICATION

Functional Testing:

[✓] Core Mechanics

- [✓] Player movement in **all 6** gravity directions
- [✓] Gravity switching with energy cost
- [✓] Energy regeneration system
- [✓] Crystal collection and counting
- [✓] Checkpoint save and respawn

[✓] Enemy AI

- [✓] Patrol behavior along waypoints
- [✓] Player detection (line of sight)
- [✓] Chase behavior when player detected
- [✓] Attack behavior when in range
- [✓] Return **to** patrol after losing player

[✓] Mechanisms

- [✓] Moving platforms (linear and circular)
- [✓] Pressure plates activate/deactivate
- [✓] Energy barriers unlock with crystals
- [✓] Hazard zones trigger death
- [✓] Exit portal checks requirements

[✓] UI System

- [✓] HUD updates in real-**time**
- [✓] Language switching (EN/CN/JP/KR)
- [✓] **Pause menu** functions
- [✓] End level screen displays correctly
- [✓] **Main menu** navigation

[✓] Game Flow

- ☒ Level start initialization
- ☒ Timer countdown
- ☒ Win condition (crystals + exit)
- ☒ Lose condition (time out)
- ☒ Score calculation
- ☒ Rating system (S/A/B/C/D)

☐ Build Testing (To be done after Unity setup)

- ☐ Build completes without errors
- ☐ Executable runs on target platform
- ☐ All scenes load correctly
- ☐ No critical runtime errors
- ☐ Performance acceptable (30+ FPS)

SUBMISSION CHECKLIST

Before Submission Deadline (04/Mar/2026 15:00):

☐ Game Design Report

- ☐ Written in proper format (8 pages max body + 10 pages max appendix)
- ☐ All sections completed
- ☐ GitHub link included at end
- ☐ Proofread for errors
- ☐ Exported as PDF
- ☐ Uploaded to Blackboard

☐ Video Demo

- ☐ Recorded and edited (under 5 minutes)
- ☐ Uploaded to YouTube/cloud service
- ☐ Link tested and accessible
- ☐ Viewing permissions set correctly
- ☐ Link included in report

☐ GitHub Repository

- ☐ All code committed and pushed
- ☐ Repository accessible
- ☐ README file included
- ☐ Commit history clean and organized
- ☐ No unnecessary files (Library, Temp, etc.)

☐ Lab Discussions

- ☐ Week 3 discussion attended and documented
- ☐ Week 5 discussion attended and documented
- ☐ Feedback incorporated into project
- ☐ Evidence of feedback application prepared

☐ Unity Project

- ☐ Project opens in Unity 2022.3 LTS without errors
- ☐ All scenes functional
- ☐ All prefabs created and assigned
- ☐ Build settings configured
- ☐ Test build created and verified

GRADING BREAKDOWN SUMMARY

Assignment 001 Total: 25% of module grade

Game Design Report: 40% (10% of module)

- Game overview and design: 18%
- Prototype description: 10%
- GitHub usage: 5%
- Quality and clarity: 7%

Video Demo: 40% (10% of module)

- Prototype demonstration: 20%
- Explanation of elements: 10%

- Video quality: 10%

Game Idea Discussions: 20% (5% of module)

- Week 3 participation: 7%
- Week 5 participation: 7%
- Feedback application: 6%

POST-SUBMISSION NOTES

After submission, this project will be used for Assignment 002 (75% of module):

- Final implementation: 35%
- Video demo: 20%
- Presentation/Live demo: 20%

Continue development after Assignment 001:

- Polish existing mechanics
- Add visual assets and effects
- Implement audio system
- Create additional levels
- Optimize performance
- Fix bugs discovered during testing

IMPORTANT REMINDERS

1. Plagiarism: All work must be original. Do not copy code or assets.
2. Collaboration: This is an individual project. No group work allowed.
3. Deadline: 04/Mar/2026 15:00. Late submissions penalized.
4. Video Link: Must be accessible. Test before submission.
5. GitHub: Repository must be accessible to teaching staff.

- 6. Lab Attendance: Mandatory for Week 3 and Week 5.
- 7. Build Requirement: Project must build successfully.
- 8. Unity Version: Must use Unity 2022.3 LTS.

CONTACT FOR SUPPORT

Course Instructor: Dr. YingLiang Ma Email: yingliang.ma@uea.ac.uk

Teaching Staff: Available in game labs (Week 3 and Week 5)

GitHub Issues: For technical problems with the project

UEA Help: <https://help.manus.im> (for Manus-related issues)

END OF DELIVERABLES CHECKLIST

Last Updated: February 18, 2026 Project Status: Core implementation complete, Unity setup required Next Steps: Complete Unity scenes, create prefabs, record video demo