



UNIVERSITY OF  
LINCOLN

## Lincoln School of Computer Science

### Assessment Component Briefing Document

**Title: CGP2004M Computer Graphics and Games Programming - Assignment 2**

**Indicative Weighting: 40%**

#### Learning Outcomes:

On successful completion of this component a student will have demonstrated competence in the following areas:

- [LO1] apply appropriate mathematical/algorithmic techniques for 2D and 3D graphics;
- [LO3] implement efficient algorithms for computer games programming;
- [LO4] design and develop games software using appropriate games and graphics programming techniques and standard graphics libraries.

#### Requirements:

For this assignment you are required to re-develop a game that is modelled on any classic arcade game of your choosing. However, as you are bringing this game into the 21<sup>st</sup> century, using XNA, there has to be new features in this game. The game can be developed in either XNA 3.1 or XNA 4.0. A list of classic arcade games can be found here: [http://en.wikipedia.org/wiki/List\\_of\\_arcade\\_games](http://en.wikipedia.org/wiki/List_of_arcade_games)

#### Task 1:

You are to write a brief game design document (no more than 1000 words) with the following four subject headings:

- Arcade game being modelled – Which game have you chosen, and why?
- Premise – What is the aim of the game? (end state, achievements, etc)
- Upgrade modifications – What changes have you made to this game to make it more modern? E.g. adding 3D elements, changing game play in line with new technologies and recent gaming changes, multiplayer, etc.
- Instructions – How to play the game, what are the controls.

#### Task 2:

You are to use XNA to re-develop an idea from an old arcade classic outlined in Task 1 above. As part of the requirements of the game chosen, you must have the following functionality:

##### Collision Detection

- Detect interaction between various objects in the game

##### Collision Response

- Determine a response based on the collision of two objects

##### Sounds

- Background music

- Interactive sounds (for example, objects colliding)

**Interactivity**

- Some way of controlling the objects on the screen, sprites, 3D models, etc. This can be a combination of keyboard, mouse and Xbox 360 controller.

**Animation**

- Animated sprites (2D) and key framed 3D models.

In addition to the above, your game must provide a HUD, that is, textual information pertaining to lives remaining, score, and health. There must also be an option menu that allows you to start a new game.

**Useful Information:**

This assessment is individually assessed item. Your work must be presented according to the Lincoln School of Computer Science guidelines for the presentation of assessed written work.

Please make sure you have a clear understanding of the grading principles for this component as detailed in the accompanying Criterion Reference Grid.

If you are unsure about any aspect of this assessment component, please seek the advice of a member of the delivery team.

**Submission Instructions:**

The deadline for submission of this work is included in the School Submission dates on Blackboard.

The submission should be in electronic format as directed by the guidelines for the presentation of assessed written work. Any written document should be submitted in PDF format. Any code should be submitted in ZIP format ONLY.

*DO NOT include this briefing document with your submission.*