UNIVERSITY OF Hull

DEPARTMENT OF COMPUTER SCIENCE
ASSESSMENT DESCRIPTION 2015/16
(EXAM TESTS WORTH ≤15% AND COURSEWORK)

MODULE DETAILS:

Module Number:	08356	Semester:	1
Module Title:	Games Programming and Advanced Graphics		
Lecturer:	QL		

COURSEWORK DETAILS:

Assessment Number:	1	of	2		
Title of Assessment:	DUNGEON GAMES GRAPHICS EFFECTS IN GLSL				
Format:	Program	Report			
Method of Working:	Individual				
Workload Guidance:	Typically, you should expect to spend between	40	and	50	hours on this assessment
Length of Submission:	This assessment should be **no** more than: *(over length submissions **will be** penalised as per University policy)*	1000 **words** *(excluding diagrams, appendices, references, code)*			

PUBLICATION:

Date of issue:	16 October 2015

SUBMISSION:

ONE copy of this assessment should be handed in via: *Only 08125 can use white box*	E-Bridge		If Other (state method)	
Time and date for submission: *(consider exam period for ACWs worth 100%)*	**Time** *(MUST be between 12-4pm)*	4:00pm	**Date** *(MUST not be a bank holiday or a Friday for white box submissions)*	12 November 2015
If **multiple hand–ins** please provide details:				
Will submission be scanned via TurnitinUK?	No	If submission is via TurnitinUK within E-Bridge students MUST only submit Word, RTF or PDF files. Students MUST NOT submit ZIP or other archive formats. Students are reminded they can **ONLY** submit **ONE** file and are be responsible for ensuring they upload the correct file at the point of submission		

The assessment must be submitted **no later** than the time and date shown above, unless an extension has been authorised on a *Request for an Extension for an Assessment* form which is available from the Departmental Office (RB-308) or

http://intra.net.dcs.hull.ac.uk/student/exam/Advice%20regarding%20resits%20in%20modules%20passed%20by%20compe/Forms/AllItems.aspx.

If submission is via TurnitinUK within E-Bridge staff must set resubmission as standard, allowing students to resubmit their work, though only the last assessment submitted will be marked and if submitted after the coursework deadline late penalties will be applied.

MARKING:

Marking will be by:	Student Name

COURSEWORK COVERSHEET:

BEFORE submission, you **must** ensure you complete the **correct** departmental ACW cover sheet (if required) and attach it to your work. The coversheets are available from: http://intra.net.dcs.hull.ac.uk/student/ACW%20Cover%20Sheets/Forms/AllItems.aspx	NO coversheet required as E-Bridge submission

ASSESSMENT:

The assessment is marked out of:	100	and is worth	50	% of the module marks
N.B If multiple hand-ins please indicate the marks and % apportioned to each stage above (i.e. Stage 1 – 50, Stage 2 – 50). It is these marks that will be presented to the exam board.				

ASSESSMENT STRATEGY AND LEARNING OUTCOMES:

The overall assessment strategy is designed to evaluate the student's achievement of the module learning outcomes, and is subdivided as follows:

LO	Learning Outcome	Method of Assessment *{e.g. report, demo}*
4	*Develop an application using theory and programming techniques appropriate to the entertainment domain*	Program, report
6	*Apply the application of vectors and matrices to graphical problems*	Program, report

Assessment Criteria	Contributes to Learning Outcome	Mark
quality of graphics rendering	4, 6	40
quality of deformation and animation	4, 6	35
novelty features	4, 6	10
quality of GLSL code	4, 6	10
quality of report	4	5

FEEDBACK

Feedback will be given via:	Mark Sheet	Feedback will be given via:	N/A
Exemption (staff to explain why)			
Feedback will be provided no later than 4 'teaching weeks' after the submission date.			

This assessment is set in the context of the learning outcomes for the module and does not by itself constitute a definitive specification of the assessment. If you are in any doubt as to the relationship between what you have been asked to do and the module content you should take this matter up with the member of staff who set the assessment as soon as possible.

You are advised to read the **NOTES** regarding late penalties, over-length assignments, unfair means and quality assurance in your student handbook, also available on the department's student intranet at:

- http://intra.net.dcs.hull.ac.uk/student/ug/Handbooks/Forms/AllItems.aspx (for undergraduate students)
- http://intra.net.dcs.hull.ac.uk/student/pgt/Student%20Handbook/Forms/AllItems.aspx (for postgraduate taught students).

In particular, please be aware that:

- Your work will be awarded zero if submitted more than 7 days after the published deadline.
- The overlength penalty applies to your written report (which includes bullet points, and lists of text you have disguised as a table. It does not include contents page, graphs, data tables and appendices). Your mark will be awarded zero if you exceed the word count by more than 10%.

Please be reminded that you are responsible for reading the University Code of Practice on the use of Unfair means (http://student.hull.ac.uk/handbook/academic/unfair.html) and must understand that unfair means is defined as any conduct by a candidate which may gain an illegitimate advantage or benefit for him/herself or another which may create a disadvantage or loss for another. You must therefore be certain that the work you are submitting contains no section copied in whole or in part from any other source unless where explicitly acknowledged by means of proper citation. In addition, **please note** that if one student gives their solution to another student who submits it as their own work, **BOTH** students are breaking the unfair means regulations, and will be investigated.

In case of any subsequent dispute, query, or appeal regarding your coursework, you are reminded that it is your responsibility, not the Department's, to produce the assignment in question.

Assessment Description

Please turn to next page for the detailed coursework descriptions.

DUNGEON GAMES GRAPHICS EFFECTS IN GLSL

The aim of the assignment is to provide you the opportunity to gain the practical experience of writing graphics effects in shaders using the OpenGL shading language. In this assignment, you are required to design and implement in GLSL a set of graphics effects used in a dungeon-based game. All the effects should be integrated as one single graphic scene involving multiple drawing passes and displayed using RenderMonkey™ Toolsuite.

Here is the list of effects that need to be implemented:

1. BASIC EFFECTS: (50%)
    1) Textured Dungeon walls and ceiling. (5%)
    2) Bumpy stony floor rendered using a certain mapping technique. (Texture mapping based: 5%; normal mapping based: 7%; height mapping based: 8%; parallax mapping based 10%)
    3) A table in the middle of dungeon rendered using perfragment lighting technique. (5%)
    4) An animated wood fire in the middle of the dungeon room. (7%)
    5) A rusty metal teapot sitting on the top of the wood fire. The teapot should be illuminated using the normal mapping technique to give a rusty and bumpy look of the teapot. (8%)
    6) An animated snake-like object on the floor. (5%)
    7) One or two flying avatars generated by deforming some simple tringle meshes, like sphere and teapot. (10%)

2. OWN EFFECTS AND NOVELTY FEATURES: (10%)

    Create some of your own novel graphics objects to enhance the dungeon scene visual effect, for example, a treasure chest full of golden coins, spider webs, animated dungeon ghosts.

3. ADVANCED EFFECTS (30%)

    To achieve first class marks, the following effects may need to be considered
    A. A set of animated dungeon torch fires hanging on the dungeon walls. These fires should locally illuminate the surrounding areas of the dungeon walls. (10%)
    B. A glowing ghost object using the Dino model provided in RenderMonkey software package. (10%)
    C. Ghost fog flowing in the dungeon. (10%)

4. OVERALL VISUAL EFFECT (5%)

    All effects implemented individually in different passes should be carefully coordinated and integrated to create an appealing dungeon atmosphere.

REMARKS

The geometric models and textures provided in Rendermonkey Toolsuite are sufficient for the completion of the coursework. You are allowed to use geometric models and textures either downloaded from the internet or made by yourself, but your work will be assessed mainly against the quality of your **shader programs** and **graphics effects**, **NOT** the number of passes and objects rendered.

WHAT TO SUBMIT

1. A short report (worth the remaining 5% of this assessment) to describe what you have achieved and how each effect is implemented. **Illustrate** each of your effects with some screenshots.
2. A Rendermonkey program. Export your Rendermonkey program using the Rendermonkey's Package Exporter (File->Export->Package Exporter), which will generate a zipped file containing all your effect resources.
3. Further compress your report and your rendermonkey program into a zipped file **named using your surname** and submit it via E-Bridge.