Faculty of Computing, Engineering and Media – Coursework Brief 2019/20

Module name:	**Game Engine Development**		
Module code:	**IMAT3905**		
Title of the Assignment:	**Group Game Programming**		
This coursework item is: (delete as appropriate)			Summative
This summative coursework will be marked anonymously			No
The learning outcomes that are assessed by this coursework are: 1. Be able to evaluate and select an appropriate methodology, workflow and toolchain for group work on a performance critical system. (Group work) 2. Extend and apply specialist knowledge of one part of a game engine and demonstrate within a game example. (Group work) 3. Demonstrate the ability to manage their learning within a team of specialists. (Group work)			
This coursework is: (delete as appropriate)			Groupwork
This coursework constitutes 100% to the overall module mark			
Date Set:	**January 13th 2020**		
Date & Time Due:	**May 6th Midday 2020**		
Your marked coursework and feedback will be available to you on: If for any reason this is not forthcoming by the due date your module leader will let you know why and when it can be expected. The Associate Professor of Student Experience (CEMstudentexperience @dmu.ac.uk) should be informed of any issues relating to the return of marked coursework and feedback. Note that you should normally receive feedback on your coursework by **no later than 20 University working days after the formal hand-in date,** provided that you have met the submission deadline.			8th June 2019
Late submission of coursework policy: Late submissions will be processed in accordance with current University regulations which state: *"the time period during which a student may submit a piece of work late without authorisation and have the work capped at 40% [50% at PG level] if passed is **14 calendar days**. Work submitted unauthorised more than 14 calendar days after the original submission date will receive a mark of 0%. These regulations apply to a student's first attempt at coursework. Work submitted late without authorisation which constitutes reassessment of a previously failed piece of coursework will always receive a mark of 0%."*			
Academic Offences and Bad Academic Practices: **These include plagiarism, cheating, collusion, copying work and reuse of your own work, poor referencing or the passing off of somebody else's ideas as your own. If you are in any doubt about what constitutes an academic offence or bad academic practice you must check with your tutor. Further information and details of how DSU can support you, if needed, is available at:** http://www.dmu.ac.uk/dmu-students/the-student-gateway/academic-support-office/academic-offences.aspx and http://www.dmu.ac.uk/dmu-students/the-student-gateway/academic-support-office/bad-academic-practice.aspx			

Tasks to be undertaken:

In this assignment each student will contribute an individual task to a larger team coursework consisting of an improved game engine and associated development tool. This will form the basis for the creation of a game that shows off the features implemented into the game engine. The assessment criteria are given below:

- **Individual Task (40%)** ~~**(30%)**~~ A different individual task from each group member showcasing a skill such as improved rendering, physics, AI, memory management, audio, alternative graphics API, etc.
- **Tool Development (30%)** A tool to aid the development of games in your engine such as a level editor, asset baker, in game memory/performance profiling.
- ~~**Game Development (20%)** The game should be a playable vertical slice including menu/title screens, score systems, level progression etc.~~
- **Group Professional Practises and Documentation (30%)** ~~**(20%)**~~ Strong use of source control and project management tools that showcase the management of tasks and documents regular meetings/discussions with all group members recording time spent on the project.

As a team you may chose to use one of you own game engines from IMAT3904 or a dynamically linked version of the game engine presented in the IMAT3904 lectures. If you wish to use the engine from the lecture you will need to speak to the module leader. Your engine may be 2D or 3D, however you must use the graphics API directly and not through a third party library such as SFML.

Note that while this is a group project, marks will be allocated on an individual basis due to the inclusion of a significant individual task alongside the group tasks and professional practise evidence. Group members should aim to overcome difficulties in team development and help each other where possible to gain the highest Game Dev and Professional Practise marks. GitHub will record each individual's contribution.

Deliverables to be submitted for assessment:

Code project through GitHub Classroom.

Report on project management to include meeting minutes, project backlog/Kanban board, burndown chart and task allocations per sprint through turnitin link. A template is available on blackboard.

A group viva and presentation on a date to be specified.

How the work will be marked: Using the attached rubric and returned electronically.	
Module leader/tutor name:	Simon Coupland
Contact details:	simonc@dmu.ac.uk

Description	0-29%	30-39%	40-49%	50-59%	60-69%	70-89%	90-100%
Individual task (40 %)	No individual task.	Insufficient attempt, i.e. does not compile or does not do anything of consequence.	A basic task has been performed mostly using code from existing examples but with not added extra features or any creativity. Not integrated with group codebase.	The task is implemented with at least one new feature compared to existing examples. Good has been integrate with group codebase.	The task is implemented with several new features compared to existing examples. Integrated using ECS where appropriate and integrated into any testing/profiling regime.	A substantial development and an original approach to design and development of the task. Seamlessly integrated to create a unified and robust engine.	Innovation beyond the specification.
Tool development (30 %)	No tool.	Insufficient attempt, i.e. does not compile or does not do anything of consequence.	Performs a basic task which does not aid the development/testing of a game with the submitted engine.	Performs a substantive task which would be useful for anyone developing/testing a game with the submitted engine. Not a standalone tool.	Performs a substantive task which would be useful for anyone developing/testing a game with the submitted engine. A standalone tool.	Performs a substantive task which improves the performance of a developed game in terms of functionally, performance or development time. A standalone tool.	Innovation beyond the specification.
~~Game Development (20 %)~~	~~No attempt at design and development of game play~~	~~Insufficient attempt, i.e. does not compile or does not do anything of consequence.~~	~~A game play with low volume of the work that is not particularly fun to play.~~	~~A game play with good level of work, but with some components missing such as level progression.~~	~~A solid 'vertical slice' containing level progression, score systems, menus etc. Interesting game play with good levels of work~~	~~Interesting, well implemented and engaging 'vertical slice' of a game that has been thought through and utilises most of the engine abilities.~~	~~Innovation beyond the specification.~~
Group Professional Practises and Documentation (30 %)	No evidence of group work (could be in the form of a web site, a blog, git, Kanban, …). No use of source code management tools	Group does not work together and has not been able to resolve problems. Little evidence of group work provided. Insufficient use of source code management tools.	Good group work Basic use of source code management Some evidence of mentoring to help group members. Poor management or management reporting.	Good work on mentoring group members, Evidence of use of an agile approach support by appropriate documentation.	The group has been able to plan and work together well, Good use of tools for most aspects of project management with string management reporting. Decent attempt at time recording.	A dynamic group with good management, excellent use of tools, mentoring and teaching activities within group where necessary. Excellent management reporting including thorough time records.	Innovation beyond the specification.