



Assessment Brief Proforma

1. Module number	<i>SET08116</i>
2. Module title	<i>Computer Graphics</i>
3. Module leader	<i>Babis Koniaris</i>
4. Tutor with responsibility for this Assessment Student's first point of contact	<i>As above</i>
5. Assessment	<i>Practical coursework</i>
6. Weighting	<i>60% of module assessment</i>
7. Size and/or time limits for assessment	<i>None</i>
8. Deadline of submission	Your attention is drawn to the penalties for late submissions <i>Part 1: 18th of March at 5pm</i> <i>Part 2: 6th of May at 5pm</i>
9. Arrangements for submission	Via Moodle – See coursework document.
10. Assessment Regulations	All assessments are subject to the University Regulations
11. The requirements for the assessment	See coursework document.
12. Special instructions	<i>None</i>
13. Return of work and feedback	<i>Part 1: Feedback will be provided in the lab during demo sessions.</i> <i>Part 2: Feedback will be provided within 3 weeks of submission via Moodle.</i>
14. Assessment criteria	See coursework document.

Computer Graphics SET08116

Coursework Specification

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General Information

The aim of this coursework is twofold:

1. to create a 3D scene using OpenGL that demonstrates that you have a **solid understanding of Computer Graphics fundamentals**;
2. implement more **advanced Computer Graphics techniques** of your choice.

The coursework is split up into two parts, weighted 45% and 55% respectively. The two parts have **different deadlines**.

Part 1: The objective of this part is to demonstrate your understanding of computer graphics principles: **you must implement a scene in which a prescribed set of features is implemented. These features are listed in the marking scheme.**

Part 2: You are tasked to implement more advanced prescribed features, and also to implement something of your choice that hasn't been covered in the practical. Examples of possible advanced features are provided in lectures, but your choice is not limited to those suggestions. You may elect to focus on a single complex technique, or a number of simpler techniques combined in the same scene. You are strongly encouraged to discuss your ideas with your tutor to ensure that what you are proposing is suitable for this coursework.

Report

You are to deliver a report for the **second part** of the coursework, documenting what you intended to achieve, what you actually achieved and how. Your report must be written using the Napier Report Template, and delivered as a .pdf

github.com/edinburgh-napier/aux_latex_cw_template

Deliverables and Deadlines

Part 1 – 45%

A scene that exhibits graphical features listed in the marking scheme.

Submission deadline: **Friday the 18th of March 2022 at 5pm**

Demonstration: You are required to briefly demonstrate your project and code to your tutor during the lab of the week starting the 21st of March. **Only projects that will be demonstrated will be marked.**

Part 2 – 55%

A scene that exhibits more advanced Computer Graphics techniques (see marking scheme).

Submission deadline: **Friday the 6th of May 2022 at 5pm**

Part 1 - Marking Scheme

Component and Weighting		Associated Marks
Source Code 5%		
Code quality Your code should be readable and well commented.		3
Efficiency Maintain a high framerate and low frame latency, no unnecessary processing and asset loading.		2
Graphical Features 40% - (All of these features are mandatory)		
Multiple Cameras Cameras of at least two different types should be selectable using key shortcuts and some more advanced user interaction.		8
Multiple lights and light types		8
Multiple models / Transform hierarchy You are allowed to use primitives, but should also use models loaded from files. Demonstrate the use of transform hierarchies in a suitable scenario.		8
Texturing Applying textures correctly to objects of varying shapes		8
Materials shading Objects with materials that have different diffuse and specular and colour values.		8

Part 2 - Marking Scheme

Component and Weighting		Associated Marks
Final Report 10%		
Formatting, References, Grammar		2
Content You should cover the work you have done in detail, explain any maths/theories required to implement your effects. Discuss any difficulties encountered. Mention anything you didn't manage to include with explanations / discuss future work.		8
Source Code 5%		
Code quality		3
Efficiency		2
Graphical Features 40%		
Shadowing Objects can cast and receive shadows, where appropriate.		10
Post-processing effects Selection of postprocessing effect.		10
Other features You will be assessed on the scope and quality of the features you have implemented. These features should not be direct applications of what was covered in the practicals.		20

Important Notes

There are some constraints to the scene that you will develop:

- Your scene must use the rendering framework developed during the practical part of the module. This framework is built using C++ and OpenGL.
- You need to provide screenshots of your scene from multiple viewpoints.
- You should have at least one interactive (user controllable) camera
- All coursework should to be demonstrated prior to submission. This is to provide you with some initial feedback on the scene you have developed.
- Your coursework must be able to be compiled and executed on the D2 computers
- Your coursework should maintain a high framerate (60+fps) at a minimum of a 720p resolution

Note that you are expected to spend approximately 60 hours completing this assignment. How you split this time up depends on the scene you try to implement. However, you should aim to spend 10 hours a week working towards completing this coursework, including time spent on practical work.

Remember, you are required to submit a high quality report, screenshots, and professional videos emphasizing your graphical submission. In addition to source code, that must be compiled without intervention, you should include a README file in the actual submission, briefly explaining how to use your application (e.g., implemented shortcuts).

Submission checklist

Coursework Part 1 <MATIC>_SET08116_CW1.zip	Coursework Part 2 <MATIC>_SET08116_CW2.zip
<ul style="list-style-type: none">• Screenshots• Source code• A README file• Working Release Executable	<ul style="list-style-type: none">• Final Report - <MATIC>_cw2_report.pdf• Screenshots• Link to Video• Source code• A README file• Working Release Executable

Submission format Important notes

- Only submit your coursework files and content i.e., **do not** submit the entire SET08116 folder with the workbook and lab content.
- Your executable should be compiled in release mode. It **Must** work as a standalone executable (within a folder of assets).

- Package your submissions as **zip** files named <MATRIC>_SET08116_CW[1/2].zip.
- Within the zip, have individual components in sensible locations.
- The Maximum file limit for each Zip file is 100MB.