5CC510 – Graphics II



University of Derby

Department of Electronics, Computing and Mathematics

Module Assessment Specification

Module Leader: Leonardo Stella



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| Module Code and Title: | 5CC510 – Graphics II |
| Assignment No. and Title: | **Portfolio Assessment:** Comparative Study of Graphics APIs |
| Assessment Tutor:  Leonardo Stella | **Weighting Towards Module Grade:** 40% |
| Date Set: 19/01/20 | **Hand-in Deadline Date:** Friday 27th March 2020 at 11:59pm |

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| Penalties for Late Submission: |
| Work submitted after the designated deadline, or assessed extended deadline, is deemed late. Late submission now falls into two categories within the regulations:  • Late submission with good reason – granting a seven-day uncapped extension (if approved).  • Late submission without good reason – granting a seven-day capped extension (capped at pass mark).  Any work received after seven days will not be marked and a non-submission (NS) will be recorded. This is unless you either have a support plan that specifically allows an extension, or you have an approved EEC. The exceptional extenuating circumstances Form (EEC) available from <http://www.derby.ac.uk/ssis/forms> should be submitted normally before the deadline date but no later than two weeks after the deadline. The EEC will be treated in line with the University’s policies and procedures.  There are 3 distinct processes in place to deal with differing student circumstances:  1. Assessed Extended Deadline (AED): Students with disabilities or long-term health issues are entitled to a Support Plan.  2. Exceptional Extenuating Circumstances (EEC): The EEC policy applies to situations where serious, unforeseen circumstances prevent the student from completing the assignment on time or to the normal standard. Students who submit a successful EEC claim will usually be required to complete a different assessment to that which was originally set. <http://www.derby.ac.uk/eec>  Late Submission: Requests for late submission will be made to the relevant Head of Discipline (or Head of Joint Honours for joint honours students) who can authorise an extension of up to a maximum of one week. |

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| Level of Collaboration: |
| This is an individual assignment. No collaboration with other students or anyone else is allowed. |

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| Learning Outcomes Covered in this Assignment: |
| On successful completion of the module, students will be able to:  Develop an in-depth familiarity with modern real-time rendering APIs and related pragmatic aspects of graphics programming. |

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| Criteria for Assessment: |
| This coursework assesses the students’ ability to critically evaluate and compare concepts in graphics. The goal of this coursework is to produce an approximately 1500-word long research paper describing the evolution of different APIs and comparing some of the key features of the latest version of each API.  Your assignment must be submitted electronically via Course Resources by the due date and time noted above. Full information on doing this can be found at http://www.derby.ac.uk/esub.  The work will be graded under the standard University grading scheme under a range of criteria provided later in the document. The grade descriptor table is shown below to give students an indication of how marks will be assigned within each category.  Assessment feedback will be given in the Course Resources in written form within 3 weeks of the submission deadline. Additional one-to-one feedback sessions can be organised if needed.  A copy of this grade descriptor document and accompanying information is available through the University Rules, Rights, and Responsibilities document available online at <http://www.derby.ac.uk/about/organisation/academic-regulations/14-15/>. |

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| Anonymous Marking: |
| All submitted assignments for this module will appear in an anonymous format to the Marking Tutor and internal/external moderators. As such you are requested not to identify yourself anywhere within your submitted assignment (e.g. by putting your name on the front cover sheet). This will maintain your anonymity to your Marking Tutor and Internal/External Moderators.  The principle behind the usage of anonymous marking of assignments is to reassure students that all assignments are marked in an equitable and unbiased manner, thereby ensuring the maintenance of high academic quality standards within the marking of the assessments. |

# Coursework

### Introduction

### In this module, you will be using the graphics API Direct3D in the practical sessions and the other assessed component. However, Direct3D is not the only graphics API that provides access to the GPU that is used for the development of computer games. For this assignment, you are to write a paper comparing and contrasting Direct3D with the other graphics APIs that could possibly be used in the development of a high-performance computer game. One of these is OpenGL, but there are others.

### Your paper should include:

### A description of the evolution of each API, focusing on the relevance of each change to the development of computer games and why it was necessary.

### A comparison of the key features of the latest version of each API, with special emphasis on their suitability for writing computer games, contrasting different approaches. In order to achieve a grade of 60% or higher, it is expected that your paper will include original examples (i.e. written by you) of program code to illustrate the different approaches used with each API.

### It is important to note that you are expected to do detailed research for this paper and to back up your statements with appropriate citations to supporting literature using the Harvard or IEEE referencing system. If you are unfamiliar with how to do accurate referencing, you will find the information at the following URL useful. It provides detailed information on how you should cite and reference material in your paper.

### <http://www.derby.ac.uk/library/study-skills/citing-and-referencing>

### Your paper should be approximately 1500 words (not including example code, references and any illustrations), but there is no penalty for going over or under this size as long as what you write is relevant.

### Deliverables:

You must submit your paper via Course Resources by the due date and time noted above. Full information on doing this can be found at http://www.derby.ac.uk/esub. You should submit one file that is in PDF, DOC, or DOCX format. Please name your submission as <your student number>.PDF (e.g. if your number is 012345678, your submission would be 012345678.PDF) if you submit a pdf file (or analogous for other formats).

# Assessment

Your report will be assessed per the following criteria.

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| % Mark | Mark Descriptors | Class |
| 70-100% | **Excellent**  The paper has been written to a very high standard with a high level of analysis and evaluation. It is exceptionally well researched. A very high quality of presentation with trivial or minor errors. Appropriate code examples, some original, have been provided that illustrate the points made. | First |
| 60-69% | **Very good**  The paper has been written to a high standard with a very good level of analysis and evaluation. It is well researched, but there are a few minor instances of errors in understanding. A high quality of presentation with minor errors. Appropriate code examples have been provided that illustrate the points made. | Second Division 1 |
| 50-59% | **Good**  A fairly good level of analysis and evaluation. Quite well researched, but there are some clear areas of lack of understanding of the concepts. A good standard of presentation. Some deficiencies in presentation. Some attempt at providing code examples has been made, but they are not necessarily appropriate. | Second Division 2 |
| 40-49% | **Satisfactory**  A sound standard of work. A fair level of analysis and evaluation. Adequately researched, but there are significant misunderstandings and errors. A sound standard of presentation. No code examples. | Third |
| 35-39% | **Unsatisfactory**  Overall marginally unsatisfactory. Some sound aspects but some of the following weaknesses are evident; inadequate analysis and evaluation; not well researched; standard of presentation unacceptable; ideas unclear and incoherent; some significant errors and misunderstandings. Marginal fail. | Marginal Fail |
| 1-34% | **Poor**  Below the pass standard. A poor analysis and evaluation. Poorly researched. presentation unacceptable; ideas confused and incoherent, some serious misunderstandings and errors. | Fail |
| NS | **Non-submission**  No work has been submitted. |
| Z | **Academic offence notation**  Applies to proven instances of academic offence. |

For further information, see <http://www.derby.ac.uk/academic-regulations>