PROGRAMME SPECIFICATION	

1	**Awarding Institution**	Newcastle University
2	**Teaching Institution**	Newcastle University
3	**Final Award**	MSc
4	**Programme Title**	Computer Game Engineering
5	**UCAS/Programme Code**	5152
6	**Programme Accreditation**	British Computer Society
7	**QAA Subject Benchmark(s)**	Non appropriate in computing PG
8	**FHEQ Level**	Masters
9	**Date written/revised**	29 April 2013

10 Programme Aims

1. To equip students with the skills and knowledge required to develop computer game software
2. To provide a qualification enhancing employment prospects in the computer games industry
3. To provide an international perspective on advancements in computer game development
4. To provide a programme which meets the FHEQ at Masters level and takes appropriate account of the draft benchmarking standards for Taught Masters Degrees in Computing developed under the sponsorship of the Conference of Professors and Heads of Computing (CPHC) with the support of the QAA

11 Learning Outcomes

The programme provides opportunities for students to develop and demonstrate knowledge and understanding, qualities, skills and other attributes in the following areas.

Knowledge and Understanding

On completion of the programme, students will be able to:

A1. Demonstrate a knowledge of advanced techniques for programming appropriate software for solving computer game related problems
A2. Understand how to design computer games to ensure user requirements for game play are satisfied
A3. Be aware of major professional, legal and ethical issues associated with work in computer game development
A4. Understand the international character of contemporary developments in the computer game industry

Teaching and Learning Methods

The primary means of imparting knowledge and understanding (A1, A2, A3 and A4) is lectures. In the case of A1 and A2, these are supplemented by practical classes. Practical classes allow students to check their learning in an environment supervised by a member of staff while working on a number of module specific exercises. In A3 and A4 lectures are supplemented by seminars. Seminars afford an opportunity for guided discussion, allowing students to realise where their opinions fit with those of others. A4 has an additional element of learning that specifically encourages independent reading in the form of a short research literature survey supervised by a member of staff. During this survey students are given extensive support and guidance on reading materials and how to use them in producing a critical evaluation on a games related subject. An independent research project carried out under the supervision of a member of staff during the summer months also aid in students attaining A1, A2, A3, and A4.

Assessment Strategy

Knowledge and understanding of the subject is primarily assessed by written examinations (A1, A2, A3, and A4). This is supplemented in the case of A1 and A2 with practical work to assess technical ability in the development of computer games. A4 is supplemented with a literature survey to asses the ability to form arguments expressing an individuals opinion on recent developments in the games industry. A summer research project is designed to assess the ability to apply knowledge and understanding in a practical engineering exercise associated to the development of computer game related technologies (A1, A2, A3, and A4).

Intellectual Skills

On completing the programme students should be able to:

B1. Realise most appropriate solution for computer game related problems
B2. Analyse technologies relevant to computer games
B3. Evaluate the appropriateness of computer game content and their interfaces
B4. Evaluate contemporary developments in computer technologies

Teaching and Learning Methods

Intellectual skills are developed through practical classes (B1 and B2), seminars (B2 and B3), and literature surveys together with research projects (B3 and B4). Students are encouraged to acquire intellectual skills through analysing case studies during practical classes (B1 and B2), solving problems arising from these (B1 and B2) and by completing a literature survey and a research project, both supervised by a member of staff (B3 and B4).

Assessment Strategy

Intellectual skills are assessed by unseen written examinations (B1, B2, B3 and B4), assessed practical work (B1 and B2) and by completing a literature review and research project supervised by a member of staff (B1, B2, B3 and B4).

Practical Skills

On completing the programme students should be able to:

C1. Design, and implement software suitable for computer games
C2. Organise and take part in systematic optimisation of computer game software
C3. Apply the leading techniques for game software development
C4. Develop methods for assessing game software performance
C5. Assess Computer game interfaces

Teaching and Learning Methods

Practical skills are developed in practical classes (C1, C2 and C3) and seminars (C3). Research project and literature survey will encourage “learning by doing” (C1, C2, and C3) via the development of their own solutions to computer game related problems. Throughout all practical classes, seminars and research project students will develop an ability to apply critical reasoning to judge the suitability of approaches to ensure appropriate game performance requirements and interfaces are satisfied (C4 and C5).

Assessment Strategy

Practical skills are assessed by coursework exercises (C1, C2, C3 C4 and C5) as well as research projects (C1, C2, C3, and C4).

Transferable/Key Skills

On completing the programme students should be able to:

D1. Use computer-based resources for research in the professional literature and the capacity to undertake critical review
D2. Use a mathematical approach in determining suitability of approaches to problem solving
D3. Work as part of a team, including group-based learning, research and development activity
D4. Recognise and respond to opportunities for innovation
D5. Manage time and identify appropriate milestones and working patterns to accomplish a project
D6. Convey to others their opinions in both a technical and non-technical way

Teaching and Learning Methods

Information literacy (D1) and numeracy (D2) is developed in lectures, seminars and practical classes. In addition, D1 and D2 are also promoted by encouraging “learning by doing” via literature survey and research project supervised by a member of staff as are creativity (D4) and planning (D5). D3 is developed during group based practical work supervised by a member of staff. D6 is achieved via lectures and seminars within which presentation techniques and delivery of material via non-written mediums are emphasised.

Assessment Strategy

D1 and D2 are assessed by practical exercises and unseen written examinations. D3, D4 and D5 are assessed by literature survey research project. D6 is assessed within team work exercises and individual talks given by students in relation to their literature surveys and research projects.

12 Programme Curriculum, Structure and Features

Basic structure of the programme

- Duration: 1 Year
- Stages: Progression step between taught element and summer research project
- Credit Arrangement: 180 credits
- Options: All modules are compulsory

Key features of the programme (including what makes the programme distinctive)

- Industrial advisory board made up from high profile UK games companies
- Industrial placements at leading game studios
- Technical focus on game engineering (as opposed to social elements found in similar courses)

Programme regulations (link to on-line version)

http://www.ncl.ac.uk/regulations/docs

13 Criteria for admission

Entry qualifications

A 2:2 first degree or higher (postgraduate degree) in one of the following disciplines: Computing (IT), Maths, Physics, Games

Other qualifications and relevant industrial experience are also considered. Each application is considered individually. If you have non-standard qualifications please contact the admissions secretary and we will be glad to advise you.

Admissions policy/selection tools
Standard application via University online application process. Prospective students offered places based on entry qualifications.

Level of English Language capability
6.5 IELTS or equivalent.

14 Support for Student Learning

The Student Services portal provides links to key services and other information is available at: http://www.ncl.ac.uk/students/

Induction
During the first week of the first semester students attend an induction programme. New students will be given a general introduction to University life and the University's principle support services and general information about the School and their programme, as described in the Degree Programme Handbook. New and continuing students will be given detailed programme information and the timetable of lectures/practicals/labs/ tutorials/etc. The International Office offers an additional induction programme for overseas students.

Study skills support
Students will learn a range of Personal Transferable Skills, including Study Skills, as outlined in the Programme Specification. Some of this material, e.g. time management is covered in the appropriate Induction Programme. Students are explicitly tutored on their approach to both group and individual projects.

Numeracy support is available through Maths Aid.

Help with academic writing is available from the Writing Centre.

Academic support
The initial point of contact for a student is with a lecturer or module leader, or their tutor (see below) for more generic issues. Thereafter the Degree Programme Director or Head of School may be consulted. Issues relating to the programme may be raised at the Staff-Student Committee, and/or at the Board of Studies.

Pastoral support
All students are assigned a personal tutor whose responsibility is to monitor the academic performance and overall well-being of their tutees. In addition the University offers a range of support services, including one-to-one counselling and guidance or group sessions/workshops on a range of topics, such as emotional issues eg. Stress and anxiety, student finance and budgeting, disability matters etc. There is specialist support available for students with dyslexia and mental health issues. Furthermore, the Union Society operates a Student Advice Centre, which can provide advocacy and support to students on a range of topics including housing, debt, legal issues etc.

Support for students with disabilities
The University's Disability Support Service provides help and advice for disabled students at the University - and those thinking of coming to Newcastle. It provides individuals with: advice about the University's facilities, services and the accessibility of campus; details about the technical support available; guidance in study skills and advice on financial support arrangements; a resources room with equipment and software to assist students in their studies.

Learning resources
The University's main learning resources are provided by the Robinson and Walton Libraries (for books, journals, online resources), and Information Systems and Services, which supports campus-wide computing facilities.

All new students whose first language is not English are required to take an English Language Proficiency Test. This is administered by INTO Newcastle University Centre on behalf of Newcastle University. Where appropriate, in-sessional language training can be provided. The INTO Newcastle University Centre houses a range of resources which may be particularly appropriate for those interested in an Erasmus exchange.

15 Methods for evaluating and improving the quality and standards of teaching and learning

Module reviews
All modules are subject to review by questionnaires which are considered by the Board of Studies. Changes to, or the introduction of new, modules are considered at the School Learning and Teaching Committee and at the Board of Studies. Student opinion is sought at the Staff-Student Committee and/or the Board of Studies. New modules and major changes to existing modules are subject to approval by the Faculty Learning Teaching and Student Experience Committee.

Programme reviews
The Board of Studies conducts an Annual Monitoring and Review of the degree programme and reports to Faculty Learning Teaching and Student Experience Committee.

External Examiner reports
External Examiner reports are considered by the Board of Studies. The Board responds to these reports through Faculty Learning Teaching and Student Experience Committee. External Examiner reports are shared with institutional student representatives, through the Staff-Student Committee.

Student evaluations
All modules, and the degree programme, are subject to review by student questionnaires. Informal student evaluation is also obtained at the Staff-Student Committee, and the Board of Studies.

Mechanisms for gaining student feedback
Feedback is channelled via the Staff-Student Committee and the Board of Studies.

Faculty and University Review Mechanisms
The programme is subject to the University's Internal Subject Review process. Every five years degree programmes in each subject area are subject to periodic review. This involves both the detailed consideration of a range of documentation, and a two-day review visit by a review team which includes an external subject specialist in addition to University and Faculty representatives. Following the review a report is produced, which forms the basis for a decision by University Teaching and Learning Committee on whether the programmes reviewed should be re-approved for a further five year period.

Accreditation reports
The programme was last accredited by the British Computer Society in October 2008.

Additional mechanisms
An industrial advisory board meets once a year and provides comments on programme content. Such comment is viewed as a valuable addition to the process of tailoring the programme to reflect employer requirements.

16 Regulation of assessment

Pass mark
The pass mark is 50 (Postgraduate programmes)

Course requirements
Progression is subject to the University's Masters Degree Progress Regulations, Taught and Research and Examination Conventions for Taught Masters Degrees. Limited compensation up to 40 credits of the taught element and down to a mark of 40% is possible and there are reassessment opportunities, with certain restrictions.

Progression Step
Progression onto the summer research project requires:

- a weighted average of at least 50, prior to any compensation rule being applied
- have no module mark less than 40
- have failed no more than 40 credits

Common Marking Scheme

Summary description applicable to postgraduate Masters programmes		**Summary description applicable to postgraduate Certificate and Diploma programmes**	
<50	Fail	<50	Fail
50-59	Pass	50 or above	Pass
60-69	Pass with Merit		
70 or above	Pass with Distinction		

Role of the External Examiner
An External Examiner, a distinguished member of the subject community, is appointed by Faculty Teaching and Learning Committee, after recommendation from the Board of Studies. The External Examiner is expected to:

See and approve examination papers
Moderate examination and coursework marking
Attend the Board of Examiners
Report to the University on the standards of the programme

In addition, information relating to the programme is provided in:
The University Prospectus: http://www.ncl.ac.uk/postgraduate/ The School Brochure: http://www.ncl.ac.uk/computing/ Degree Programme and University Regulations: http://www.ncl.ac.uk/regulations/docs/

Please note. This specification provides a concise summary of the main features of the programme and of the learning outcomes that a typical student might reasonably be expected to achieve if she/he takes full advantage of the learning opportunities provided. The accuracy of the information contained is reviewed by the University and may be checked by the Quality Assurance Agency for Higher Education.

Annex

Mapping of Intended Learning Outcomes onto Curriculum/Modules

Intended Learning Outcome	Module codes (Comp/Core in Bold)
A1	**CSC8501, CSC8502, CSC8503, CSC8506, CSC8509**
A2	**CSC8501, CSC8502, CSC8503, CSC8506, CSC8509**
A3	**CSC8504, CSC8505, CSC8506, CSC8509**
A4	**CSC8504, CSC8505, CSC8509**
B1	**CSC8501, CSC8502, CSC8503, CSC8506, CSC8509**
B2	**CSC8502, CSC8503, CSC8504, CSC8506, CSC8509**
B3	**CSC8504, CSC8505, CSC8506, CSC8509**
B4	**CSC8504, CSC8505, CSC8509**
C1	**CSC8501, CSC8502, CSC8503, CSC8506, CSC8509**
C2	**CSC8501, CSC8502, CSC8503, CSC8506, CSC8509**
C3	**CSC8501, CSC8502, CSC8503, CSC8506, CSC8509**
C4	**CSC8501, CSC8502, CSC8503, CSC8504, CSC8509**
C5	**CSC8504, CSC8506, CSC8509**
D1	**CSC8501, CSC8502, CSC8503, CSC8504, CSC8505, CSC8506,CSC8509**
D2	**CSC8501, CSC8502, CSC8503, CSC8505, CSC8506, CSC8509**
D3	**CSC8506**
D4	**CSC8504, CSC8505, CSC8509**
D5	**CSC8504, CSC8506, CSC8509**
D6	**CSC8504, CSC8505, CSC8506, CSC8509**