MODULE SPECIFICATION PROFORMA

Module Code:	COM647

Module Title:	Multiplayer Design & Optimisation

Level:	6	**Credit Value:**	20

Cost Centre(s):	GACP	JACS3 **code**: HECoS code:	I610 101020

Faculty:	Arts, Science and Technology	**Module Leader:**	Richard Hebblewhite

Scheduled learning and teaching hours	24 hrs
Guided independent study	176 hrs
Placement	0 hrs
Module duration (total hours)	200 hrs

Programme(s) in which to be offered (not including exit awards)	Core	Option
BSc (Hons) Computer Game Development	✓	☐
BSc (Hons) Computer Game Development (with Industrial Placement)	✓	☐

Pre-requisites
N/A

Office use only
Initial approval: 28/11/2018 Version no:1
With effect from: 01/09/2019
Date and details of revision: Version no:

Module Aims

Modern technologies and systems now allow humans to work, play, communicate and educate more effectively. This module explores current design and development issues relating to multiplayer gaming, collaborative tools and application design.

The module analyses some of the affordances offered by such technology, how collaborative applications differ from conventional products, and how these differences can be taken advantage of when designing tools for games, media and business industries.

The final aspect of this module is to provide students with experience of planning, executing and then analysing the results of live user beta testing.

Intended Learning Outcomes

Key skills for employability

KS1	Written, oral and media communication skills
KS2	Leadership, team working and networking skills
KS3	Opportunity, creativity and problem solving skills
KS4	Information technology skills and digital literacy
KS5	Information management skills
KS6	Research skills
KS7	Intercultural and sustainability skills
KS8	Career management skills
KS9	Learning to learn (managing personal and professional development, self-management)
KS10	Numeracy

At the end of this module, students will be able to		Key Skills	
1	Compare and contrast current industry trends and identify potential opportunities for the deployment of multiplayer and collaborative technology.	KS1	KS6
2	Design, develop and deploy a prototype multiplayer or collaborative application.	KS4	KS3
3	Plan and executive a live user testing event.	KS2	KS1
		KS9	
4	Analyse the effectiveness and impact of multiplayer or collaborative technologies through practical application.	KS1	KS10
		KS5	

Transferable skills and other attributes

Derogations
N/A

Assessment:

Indicative Assessment Tasks:

The first assignment will be based around the design and development of a multiplayer/multiuser game application. The design must take into account current theory and best practice in relation to multiplayer design and balancing techniques. The students will also plan and execute a live test event with a view to gathering game performance and player experience data. The plan for the event must take into account data gathering requirements.

The second assignment will involve a presentation of all analysis and findings with respect to the live test event from assignment 1. The presentation will consider initial predictions vs actual data, plans for future development with respect to findings, and a general overview of all data and associated materials.

Assessment number	Learning Outcomes to be met	Type of assessment	Weighting (%)	Duration (if exam)	Word count (or equivalent if appropriate)
1	1,2,3	Coursework	70		2000
2	4	Presentation	30		15 mins

Learning and Teaching Strategies:

The primary skill base of this module will be delivered through a series of lectures, demonstrations and studio workshops which will equip the students with the practical means to comprehend the principles guiding multiplayer and collaborative application development along with associated technologies.

Development skills for game engine and other relevant media applications will be supported through the use of online materials and tutorials.

A series of studies relating to current issues within multiplayer and collaborative media applications will be looked and analysed over the course of the module. Students will be asked to research current trends in both gaming and media markets to determine potential areas of development.

The primary emphasis will revolve around practical application and testing multiplayer games and media products within a live event in order to gain performance data and feedback. A full analysis of the results will be expected.

Syllabus outline:

Game system design and balancing
- Strategy design and analysis
- Game theory and flow theory

Difficulty and challenge design

Ethical and social issues relating to multiplayer and distributed systems.

System security (overview and appreciation)
Multi-user games and media design, planning and deployment.
- Testing gameplay features and player experience
- Fitness for purpose.

Online cheating:
- Methods for detection and prevention
- Multi-player/user design concepts and techniques.

Massively Multi-player Online Games and large multi-user media applications.
- Design issues
- Client/server issues
- Cost and revenue models

User and focus group testing
- Test event planning
- Data gathering and analysis

Indicative Bibliography:

Essential reading

Romero, B. Schreiber, I. (2019) *Game Balance*. A K Peters/CRC Press.

Other indicative reading

Bartle, R. (2015) *MMOs from the Inside Out: The History, Design, Fun, and Art of Massively-multiplayer Online Role-playing Games*. Apress.

Freeman, G. (2018) *Multiplayer Online Games: Origins, Players, and Social Dynamics*. A K Peters/CRC Press.

Glazer, J. (2015) *Multiplayer Game Programming: Architecting Networked Games (Game Design)*. Addison-Wesley Professional

Useful Resources:

http://www.GamaSutra.com
http://www.gamesindustry.biz