# WM9G2-15 Innovative Simulation Design and Development

## 22/23

**Department**
WMG
**Level**
Taught Postgraduate Level
**Module leader**
Devon Allcoat
**Credit value**
15
**Module duration**
2 weeks
**Assessment**
Multiple
**Study locations**
University of Warwick main campus, Coventry Primary
Distance or Online Delivery

---

## Description

### Introductory description

This module takes learners through the product creation lifecycle of a serious games simulation, from inception of an idea, through to design and development of the product. The subjects covered include systems thinking, design thinking, interactive design, product design, innovation, game theory, user psychology, sales and marketing. Learners apply these concepts and practices into the creation of a serious game or simulation, which will be tailored to meet the needs of the programme and their area of interest.

### Module aims

This module aims to give learners a theoretical background to good design practice for a serious game or simulation , as well as practical experience in creating their own. It integrates knowledge from multiple disciplines to provide a holistic view of design.

### Outline syllabus

This is an indicative module outline only to give an indication of the sort of topics that may be

covered. Actual sessions held may differ.

- Concepts and tools in simulation related to game play, game flow, interactive narrative and storytelling.
- Systems thinking, design thinking, interactive design, product design.
- How to design with accessibility in mind.
- Technology for simulations and serious games
- Selling & marketing your product.
- Creation of an innovative serious game simulation.

## Learning outcomes

By the end of the module, students should be able to:

- Evaluate the main concepts and processes associated with design & development of a serious game from concept to development and release
- Critically assess relevant tools & techniques associated with serious game simulation design & development
- Conduct user requirements analysis and testing and translate into simulation requisites
- Ideate, design, develop, test and deliver a serious game to suit defined user needs

## Indicative reading list

Arnab, S., Lim, T., Carvalho, M. B., Bellotti, F., De Freitas, S., Louchart, S., … De Gloria, A. (2015). Mapping learning and game mechanics for serious games analysis. British Journal of Educational Technology, 46(2), 391–411. Available at: https://0-onlinelibrary-wiley-com.pugwash.lib.warwick.ac.uk/doi/full/10.1111/bjet.12113.

James, A. & Nerantzi, C. (eds) (2019) The power of play in higher education: creativity in tertiary learning. Cham: Palgrave Macmillan. Available at: http://encore.lib.warwick.ac.uk/iii/encore/record/C__Rb3263586.

Lupton, E. (ed.) (2011) Graphic design thinking: beyond brainstorming. New York, New York: Princeton Architectural Press. Available at: http://encore.lib.warwick.ac.uk/iii/encore/record/C__Rb3009508.

Scheiner, C. W. (2015). The motivational fabric of gamified idea competitions: The evaluation of game mechanics from a longitudinal perspective. Creativity and Innovation Management, 24(2), 341–352. Available at: https://0-onlinelibrary-wiley-com.pugwash.lib.warwick.ac.uk/doi/abs/10.1111/caim.12115

Schell, J. (2019a) The art of game design: a book of lenses. 3rd edition. Boca Raton: CRC Available at: http://encore.lib.warwick.ac.uk/iii/encore/record/C__Rb3431594.

## Research element

Students research theory as well as practical design and existing simulations and how they are used.

### Interdisciplinary

Originally an interdisciplinary module, and as discussed in the subject skills it covers a variety of disciplines from engineering and maths (systems thinking, design thinking, game theory) to psychology (motivational design, pedagogy and consumer psychology), to business skills (product design, sales and marketing).

### International

Games and simulations designed all over the world are looked at in the module, including interviews with specialists from the US, Japan, Germany and more.

### Subject specific skills

Systems thinking, design thinking, motivational design, product design, game theory, pedagogy and consumer psychology, and sales and marketing.

### Transferable skills

Effective design communication, creativity & innovation, team/group working, psychology, communication skills, decision making, critical thinking, problem solving.

---

## Study

## Study time

| Type | Required |
| --- | --- |
| Lectures | 16 sessions of 1 hour 30 minutes (16%) |
| Seminars | 3 sessions of 1 hour (2%) |
| Online learning (scheduled sessions) | 3 sessions of 1 hour (2%) |
| Online learning (independent) | 25 sessions of 1 hour (17%) |
| Assessment | 95 hours (63%) |
| Total | 150 hours |

### Private study description

No private study requirements defined for this module.

## Costs

No further costs have been identified for this module.

---

## Assessment

You do not need to pass all assessment components to pass the module.

### Assessment group A1

| | Weighting | Study time |
|---|---|---|
| Post-Module Assessment | 70% | 75 hours |

PMA design assignment: Design brief, instruction booklet and accompanying essay. Total word count of 2700, with 1500 expected for the essay.

| | | |
|---|---|---|
| In-Module Assessment | 30% | 20 hours |

Review - In-module game/simulation review, considering how to utilise it in serious/educational applications, including relevant adaptations. Group work ending with a team-based presentation, marked collectively with equal contribution (10%)

Project - Students will be grouped and each group will given a briefing, based on which they will need to come up with a simulation design and a marketing strategy. Group work ending with a team-based presentation, marked collectively with equal contribution (20%)

### Assessment group R1

| | Weighting | Study time |
|---|---|---|
| Simulation Submission | 100% | |

Design brief, instruction booklet and accompanying essay. Total word count of 4000, with 2500 expected for the essay.

### Feedback on assessment

Written feedback sheets provided as standard.

---

## Availability

## Courses

This module is Optional for:

- TWMS-H1SB Postgraduate Taught Programme and Project Management (Full-time)
  - Year 1 of H1SB Programme and Project Management (Full-time)
  - Year 1 of H1SB Programme and Project Management (Full-time)
- Year 1 of TWMS-H1S4 Postgraduate Taught e-Business Management (Full-time)