## Project Title

### HCI's What You Need to Know ! ezine

Unreal Game Level GUI Alpha:

| Tutors / Assessors | Shaun O’Shea |

## Unit number & Unit Title

- **Unit No:** 75
- **Unit code:** J/502/5677
- **Unit Title:** Human-computer Interfaces for Computer Games

### 10 Points

Grading criteria addressed by Project:

<table>
<thead>
<tr>
<th></th>
<th>P1</th>
<th>P2</th>
<th>P3</th>
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<tbody>
<tr>
<td>M1</td>
<td>M2</td>
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<td>D1</td>
<td>D2</td>
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### Date set

- **05/10/11**
- **Duration of Project:** 6 Weeks
- **Submission date:** 14/11/11

## Aims

This unit will deliver a series of taught sessions and projects that will enable students:

- To introduce learners to the way humans interact with computer games
- To develop skills in article writing and critical analysis
- To analyse the interface between an interactive game and its users
- To gain experience in designing an interface for a game element

## Learning outcomes

- Understand human-computer interfaces for games
- Understand methods of control and forms of feedback in game
- Be able to prototype an interface for a game using HCI techniques.

## Project overview

People interact with computers and gaming devices using increasingly sophisticated technologies. In addition to the traditional input devices such as the mouse and keyboard, there are touch screens, steering wheels, motion sensors, voice recognition and virtual reality devices. Even the traditional joystick can incorporate force feedback and programmable buttons, with special versions available optimised for particular games (such as flight simulations or combat).

Visual feedback can include multiple widescreen displays supplemented by multichannel surround sound creating an interactive virtual world. Audio feedback provides an edge of realism to help sustain the player’s suspension of disbelief. The study of human-computer interfaces (HCI) is not just about the technology; it also considers how people interact with the application (onscreen objects, menus etc).

As HCI provides the main point of contact between a person and the game, it is vital that
it is well designed to enable users to focus their attention solely on gameplay. HCI is an integral part of the game design process typically involving the study, design, construction and implementation of human-centred interactive computer systems. In this unit learners will analyse the interface between an interactive game and its users, develop an understanding of control and feedback mechanisms used within games, and design and evaluate an interface for a game element.

The skills and knowledge developed in this unit are also applicable to many other areas, such as computer interaction for individuals with disabilities, control of medical devices, and military applications and simulations.

<table>
<thead>
<tr>
<th>Breakdown of Tasks &amp; Grading criteria</th>
<th>Tasks</th>
<th>Grading criteria addressed by each Task</th>
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<tbody>
<tr>
<td>Curriculum Research Session/s Task A (Week One)</td>
<td>Using the Library Resource Area, Investigate Human-Computer Interfaces, in relation to the following:</td>
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<td>• Identify the ways in which we can interact with a computer/gaming system?</td>
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<td>• What HARDWARE and SOFTWARE technologies are employed now, have been in the past, and potentially will be possible in the future?</td>
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<td>• Are there any trends to particular interfaces depending on factors such as size, purpose, age of tech, age of user, user feedback etc?</td>
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<td>• Compare the types of interface you have identified, what reasons might there be for their respective strengths and weaknesses.</td>
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<td>• Choose one ‘case study’ example of a HCI or GUI technology to focus on for your ezine article/s (TASK 1)</td>
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<td>• Choose one ‘case study’ example of a feedback and control method to focus on for your ezine article/s (TASK 2)</td>
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<td>• Begin your own illustrated glossary of key terminology for this unit?</td>
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<td>By investigating these questions Students will create an individual research pack to be used in future lecture/seminar sessions)</td>
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<td>Curriculum Research Session/s Task B (Week Two) Deadline Friday 14th October 2011, 6pm</td>
<td>• You are required to submit your initial mock up designs for BOTH ezine articles via the moodle upload link provided. At this early stage you may use placeholder text (eg using a &quot;lorum ipsum generator&quot;) to stand in for your written articles which can then be added later.</td>
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<td>This will be checked and feedback given</td>
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<td></td>
<td>!! Please take care to flatten and or optimise for upload any files BEFORE uploading to moodle, there is a 5mb maximum. !!</td>
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<td>Make sure you use your Blogs effectively to support your workbook evidence and evaluation/annotation evidence throughout the process.</td>
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<tr>
<td>Task 1 – Human-computer Interfaces: What You Need to Know</td>
<td>Using appropriate layout and design software (Adobe Suite)</td>
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<td>Learners will write and design a mock up article (500 words min) for an online games ezine on the principles of HCI applied to games, identifying typical interfaces used with a range of technologies and matching user needs to typical interfaces.</td>
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</table>
### Article will cover:
- technologies
- interfaces
- human factors
- user interface design principles.

These are some initial suggestions however it is expected your own research is bound to throw up more topics, which can be discussed in group seminars or one to one tutorials with your tutor/s then subsequently used in your article/s.

### Task 2 – Feedback and Control in Games: What You Need to Know

Using appropriate layout and design software (Adobe Suite)

Learners will write and design a mock up for a second article (500 words min) for an online games ezine on feedback and control methods used in games.

Article will cover:
- forms of feedback
- information communication
- user psychology
- control method design.

These are some initial suggestions however it is expected your own research is bound to throw up more topics, which can be discussed in group seminars or one to one tutorials with your tutor/s then subsequently used in your article/s.

**In BOTH tasks make sure you use appropriate and subject specific terminology relevant to the unit/course. Employ case studies and real world examples to back up your points.**

### Task 3 – My Interface Design

Working as GUI designers within the industry, learners are tasked with designing a user interface to match a game specification.

Learners will design and create a basic gateway GUI using Scaleform and Adobe Flash supported in the UDK for a standard Unreal Tournament game level.

Learners will:
- Analyse control needs and methods to be implemented via the interface
- Analyse information needs and identify those to be addressed in the interface
- Identify any visual feedback appropriate for the interface
- Document the proposed interface (layouts and design progress)
- Produce a designed interface using appropriate design/development software/middleware.

### Extension Activities

You Can extend your activities and achievement through:

1. A wider approach to Research in the area of HCI's GUI's and other interfacing solutions utilised by Game developers in the industry
2. Extension of study skills and note taking techniques to further improve your critical analysis, planning and contextual appreciation, mind maps use of VLE and other pedagogical (learning) software
3. Produce complex and highly realised task outcomes by utilising professional techniques and practices, demonstrated by evidence and documentation.

4. Demonstrate an advanced ability to communicate through academic discourse and discussions (both in seminar lecture and written or presented situations)

5. Production of sophisticated evaluative texts (PPT, FLASH, Video Capture etc) and considered integration with a production blog/diary for the current unit.

6. Identification of opportunities for further study and annotated or noted down approaches for the extension of gained skills or knowledge which could be useful on future units (ie Identification of new software hardware solutions to enable enhanced human computer interfacing, such as body controllers ‘Kinex’, Wii ‘PS3Move’ as well as the integration and development of GUI middleware likely to be employed in the future of game development and other digital media products)

<table>
<thead>
<tr>
<th>Materials &amp; Equipment required</th>
<th>Key Words &amp; Techniques</th>
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<tbody>
<tr>
<td>XBOX LAN leads, Multiple monitors, PC’s AV projector, UDK, Scaleform, Flash, Adobe Suite, LRC, Nintendo, Wii XBOX live connection, PS3’s</td>
<td>Human Computer Interface (HCI), Graphical User Interface (GUI), Shockwave (SWF), Kismet, Node, Movie Clip, Button States, Unreal Development Kit (UDK), Flash, Actionscript 2.0, Frames Per Second (FPS), xml, html, Resolution, 1080i, 1080p</td>
</tr>
</tbody>
</table>

**Websites**

- [http://www.youtube.com/user/VoxHouseStudio](http://www.youtube.com/user/VoxHouseStudio)
- [http://www.youtube.com/user/scaleformpress](http://www.youtube.com/user/scaleformpress)
- [http://www.udk.com/download](http://www.udk.com/download)
- [http://www.actionscript.org](http://www.actionscript.org)
- [http://www.hci-journal.com](http://www.hci-journal.com)
- [http://www.gamasutra.com](http://www.gamasutra.com)
- [http://www.gamedev.net](http://www.gamedev.net)

**Task 1**

It is expected for you to generate (at least) 5 pages of sound (fully annotated) research in sketchbook/blog form in order to back up your work for this task (tutors will be looking for this at regular tutorials). This should include:

- Notes and planning (for your HCI's article) based on your research
- Documented/annotated design progress for your mock up web page (ezine)
- Ezine page layout Initial Mock-Up (C/Dev TASK B uploaded through moodle link)
- Rough draft article content/copy
- Final Article 500 word mock up Layout of the ezine article (flattened PSD Template)
- List of images and references and their sources

**Evidence to be produced for Project**

**Task 2**
It is expected for you to generate (at least) 5 pages of sound (fully annotated) research in sketchbook/blog form in order to back up your work for this task (tutors will be looking for this at regular tutorials) This should include:

- Notes and planning (for your Feedback & Control article) based on your research
- Documented/annotated design progress for your mock up web page (ezine)
- ezine page layout Initial Mock-Up (C/Dev TASK B uploaded through moodle link)
- Rough draft article content/copy
- Final Article 500 word mock up Layout of the ezine article (flattened PSD Template)
- List of images and references and their sources

Task 3

It is expected for you to generate (at least) 5 pages of sound (fully annotated) research in sketchbook/blog form in order to back up your work for this task (tutors will be looking for this at regular tutorials) This should include:

- Initial GUI design ideas and considerations
- Mock ups and prototype versions using Flash and UDK/Kismet
- Annotated screen grabs/video capture of software and techniques used
- Functional GUI game element using Adobe Suite, UDK

Date of submission – 14/11/11

ALL WORK TO BE HANDEDEIN AT THE VA OFFICE GROUND FLOOR YORK BUILDING BY 3:30pm

!! IMPORTANT !!

(Please make sure you sign the submission sheet and get a receipt from the staff, if you do not follow this procedure you have NOT officially submitted your work by deadline and are subject to an instant non submission review tutorial with the course leader, which could seriously affect your ongoing participation through the course.

### LLN opportunities

Various tasks and activities to address differentiation regarding literacy, glossaries and word games to reinforce vocational terminology. Brief written to address a range of skills allowing learners through differentiated tasks, to gain levels of expertise at various levels from Pass to Distinction. Additional support through TSA (where appropriate) who have access to Moodle and Unit material for preparation and support in key areas of the Unit programme.

### ECM opportunities

Highlight which ECM outcomes the brief addresses?

- Being healthy
- Staying safe
- Enjoy and achieve
- Making a positive contribution
- Achieving economic well-being

### Unit 75: Human- computer Interfaces for Computer Games- Grading Criteria

<table>
<thead>
<tr>
<th>To achieve a pass grade the evidence must show that the learner is able to:</th>
<th>To achieve a merit grade the evidence must show that, in addition to the pass criteria, the learner is able to:</th>
<th>To achieve a distinction grade the evidence must show that, in addition to the pass and merit criteria, the learner is able to:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>P1:</strong> describe human-computer interfaces for games with some appropriate use of subject terminology</td>
<td><strong>M1:</strong> explain human-computer interfaces for games with reference to detailed illustrative examples and with generally correct use of subject terminology</td>
<td><strong>D1:</strong> critically evaluate human-computer interfaces for games with supporting arguments and elucidated</td>
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<tr>
<td>Level</td>
<td>Description</td>
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<td><strong>P2:</strong></td>
<td>summarise accurately methods of control and forms of feedback in games with some appropriate use of subject terminology</td>
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<tr>
<td><strong>M2:</strong></td>
<td>explain methods of control and forms of feedback in games with reference to detailed illustrative examples and with generally correct use of subject terminology</td>
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<tr>
<td><strong>D2:</strong></td>
<td>critically evaluate methods of control and forms of feedback in games with supporting arguments and elucidated examples, and consistently using subject terminology correctly</td>
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<td><strong>P3:</strong></td>
<td>prototype an interface for a game using human-computer interface techniques working within appropriate conventions and with some assistance. [CT; RL]</td>
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<tr>
<td><strong>M3:</strong></td>
<td>prototype an interface for a game using human-computer interface techniques to a good technical standard showing some imagination and with only occasional assistance.</td>
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<tr>
<td><strong>D3:</strong></td>
<td>prototype an interface for a game using human-computer interface techniques to a technical quality that reflects near-professional standards, showing creativity and flair and working independently to professional expectations.</td>
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