Ollscoil na hÉireann, Gaillimh *GX____*
National University of Ireland, Galway

Autumn Examinations 2007/2008

Exam Code(s)	3IF121; 3BA 1SD1
Exam(s)	B.Sc. in Information Technology B.A. Higher Diploma in Software Design and Development
Module Code(s)	CT318 CT865
Module(s)	Human Computer Interaction
Paper No.	1
Repeat Paper	_____ Special Paper _____
External Examiner(s)	Professor John A. Keane Professor Sally McClean
Internal Examiner(s)	Prof. G. Lyons Ms. K. Young
Instructions:	Answer Question One and **two other** questions. All questions will be marked equally.
Duration	2hrs
No. of Answer Books	1
Requirements:	_____
Handout	_____
MCQ	_____
Statistical Tables	_____
Graph Paper	_____
Log Graph Paper	_____
Other Material	_____
No. of Pages	3
Department(s)	Information Technology

1. You have been asked to design an interactive web-based system for an airport food hall. The system must support the user in browsing, ordering and payment. Payment for different vendors within the one order are processed separately for each vendor, but together as one bill for the customer. Users can order in advance, i.e. before travelling, or before disembarking from plane, and notify the system of an expected collection time. Your client has stressed the importance of an effective, easy to use, and well-organised interface for their users, given the time pressures customers face.

The company has indicated that they want an initial design submission from you to include the following:

(a) A PACT analysis for this application.

[5]

(b) A paper prototype of three of the interface screens, representing the system's functional organisation and overall "look and feel". Clearly outline your rationale for each of the design choices you make.

[9]

(c) An evaluation plan, clearly outlining what activities, when, how and by whom the evaluation activities will be undertaken, for the system which will support comprehensive testing of your design.

[6]

2. Write a detailed description of **three** of the following subjects, illustrating your answer with practical examples where relevant:

Internationalisation in UID
Norman's Interaction Model
Affective Computing
Advances in Non-Visual Interaction
Usability Testing

[20]

3. (a) Design principles are intended to cover all interactive systems. Their generalisability is both their strength and weakness. Discuss the role of design principles in developing good interactive systems. In your answer consider the use of these principles in all designs: how important is context in the application of these principles?

[9]

(b) Write a one-page memo to your colleagues in your software design company, advocating the requirement to incorporate physiological data collection in all interactive product evaluations from a future date.

[5]

(c) Which interaction style would you apply to the design of each of the following and why?

- A mobile Diabetes Monitoring Device
- A Galway Events Ticketing Machine
- A Diary Management System for Mobile and Desktop Use

[6]

4. (a) You have been tasked with developing a prototype UI (User Interface) for your company's new home entertainment system. The brief highlights the need to minimise users' negative emotions (frustration, fear, anger, etc.) when using this new system. Discuss the design issues that this new UI raises, and outline a conceptual model for the design.

[10]

(b) What factors can be used to distinguish different evaluation techniques and help the interactive systems designer choose an appropriate method for evaluating their designs?

[5]

(c) Distinguish between a *conceptual model* and a *prototype*.

[5]