



NUI Galway  
OÉ Gaillimh

**Autumn Examinations 2018 / 2019**

**Exam Code(s)** 3BCT121; 3BA1; 4BA1  
**Exam(s)** B.Sc. in Computer Science and Information Technology  
B.A.

**Module Code(s)** CT318

**Module(s)** Human Computer Interaction

Paper No. 1  
Repeat Paper

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Internal Examiner(s) Prof Michael Madden  
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**Instructions:** Candidates should answer **Question 1** and **any two other** questions. All questions carry equal marks.

**Duration** 2 Hours

**No. of Pages** 3

**Requirements:**  
Release in Exam Venue

MCQ

Handout	None
Statistical/ Log Tables	None
Cambridge Tables	None
Graph Paper	None
Log Graph Paper	None
Other Materials	None
Graphic material in colour	None

**PTO**

## Q.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. (7)
- (b) A paper prototype of three of the interface screens, representing the system's functional organisation and overall "look and feel". (7)  
Clearly outline your rationale for each of the design choices you make (e.g. interaction styles).
- (c) An evaluation plan, clearly outlining what activities will be evaluated, when, how and by whom the evaluation activities will be undertaken, and how this may influence future designs. (6)

## Q.2

- (a) What makes something easy to use? What are the properties of an interactive system that make it easy to use? Modify your list to make it specific to an ageing population. (5)
- (b) A liberal newspaper has asked you to provide visualisations for their upcoming article on Climate Change in Ireland. Develop a briefing to include goals and overall outline of this project, including at least three sketches. (10)
- (c) Explain why interactivity is an important consideration in digital interface design. Describe what would influence your choices. (5)

**PTO**

### Q.3

(a) *“Perfection is attained not when there is no longer anything to add, but when there is no longer anything to take away”* (Antoine de Saint Exupery, 1954)

Analyse the above statement in light of your study of effective **visual design**, including consideration of its application to a **website of your choice** in your answer. (10)

(b) You have been asked to design a remote control device that can be used to control the lighting, heating, curtains/blinds in the lecture theatres and classrooms on the NUI, Galway campus. Prepare a prototype design, outlining the user considerations you found relevant in solving this problem. (6)

(c) In designing an interactive application there are many guidelines available to help the designer. Discuss the type and role of guidelines in producing good interactive web-based systems. (4)

### Q.4

(a) You have been tasked with undertaking a redesign of the website of the airline Aer Lingus.

Identify different categories of users and describe which data gathering techniques you would use to collect information about their respective needs. (6)

(b) You have been asked to design an interactive web-based **maths learning environment** for children to support their development of effective maths skills. The system must be appealing and fun to use, engage the children, and enable navigation by a variety of means (e.g. by topic, or through sequential lessons, or by activity). Pick two interface types which would best support this and describe their key features. (8)

(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)

**END**