



Semester 1 Examinations 2022-2023

Course Instance Code(s) 3BCT1, 3BA1, 4BDA1,
4BDS1, 4BFS1, 4bfd1
Exam(s) 3rd BCT; 3rd & 4th BA; 4BS2

Module Code(s) CT318
Module(s) Human Computer
Interaction

Paper No. 1

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Instructions: Answer **Q.1** and any **Two** other questions. All questions carry equal marks.

Duration 2 hours
No. of Pages 4
Discipline(s) Computer Science
Course Co-ordinator(s) Dr Colm O’Riordan, Dr Finlay Smith

Requirements:

Release in Exam Venue	Yes [X]	No []
MCQ Answersheet	Yes []	No [X]
Handout	None	
Statistical/ Log Tables	None	
Cambridge Tables	None	
Graph Paper	None	
Log Graph Paper	None	
Other Materials	None	
Graphic material in colour	Yes []	No [X]

PTO

CT318 Human Computer Interaction

Q.1 You are working as part of a team developing a new mobile **CookClub application**. The application is primarily targeted at cooking enthusiasts with discussions under way to link it with some high-profile chefs. Development plans also include appealing to a more general audience and including educational and instructional elements for “novice” chefs. Initial design ideas include promoting the benefits of healthy cooking and the environmental benefits of local, sustainable food preparation. The user experience is critical to ensure engagement and ongoing use.

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

- (a) A PACT analysis for this application. (6)

- (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 (e.g. interaction styles). (9)

- (c) An initial evaluation plan for the system which will support comprehensive testing of your design. This should clearly outline **what** activities will be evaluated, as well as **when** the evaluations will take place, **how** (what techniques) they will be conducted and **who** will undertake them. (5)

PTO

Q.2 (a) Effective interaction design involves achieving a balance between *divergent* and *convergent* design thinking. Using the British Design Council's Double Diamond process or Laseau's Design Funnel, elaborate on the different design activities involved during the development of a **new entertainment service** to enable users to easily manage, organise and enjoy their entertainment media (music, TV, film, books etc.) wherever they are located.

(8)

(b) You have been tasked with developing a new **e-waste management system** for your local authority. Outline the progression from **Conceptual** to **Physical** Design in this context, clearly identifying the inputs and outputs for each design phase.

(8)

(c) What is an **extreme persona**? Using an example to illustrate, explain how they can be used effectively during interaction design.

(4)

Q.3 (a) Effective interaction design is ultimately about the correct assignment of responsibilities to the parties participating in the interaction, i.e. the human and the computer. Discuss the contribution of **Design Thinking** in all its stages to achieving this effective assignment of responsibilities, using examples from your module study and projects to illustrate your answer

(9)

(b) You have been asked to design a **Smart Water meter** device that can be used to control the water usage and reduce water waste by the general public. Elaborate the prototyping approach you would use during this design project, including **what** is prototyped, **when** and **how**.

(6)

(c) "*The best way to have a good idea is to have lots of ideas*" (Linus Pauling). What techniques are useful in supporting the generation of ideas and preventing functional fixedness? Use examples from your group project to illustrate your answer.

(5)

PTO

Q.4 (a) Successful HCI is heavily dependent on evaluation. Prepare an **outline evaluation plan** for a ***new health management app*** you are developing. This plan should clearly address users' goals and identify each of the steps involved in the evaluation identifying when, how, what and by whom the evaluation activities will be undertaken.

(8)

(b) The importance of **visualisation** in successful interaction designs is well recognised, "*a picture speaks a thousand words*". What are the relevant criteria to consider in incorporating visualisations effectively into interactive applications? Use examples to illustrate your answer.

(8)

(c) Explain, using examples, the role of Norman's two **gulfs of interaction** in effective interaction design.

(4)

END