

Interaction Design

Module description

This module provides you with knowledge and methods from the field of Human-Computer Interaction (HCI) about how to better design computer systems for use by humans. This module complements other, more programming intensive modules by providing theory and techniques which will help you to design more usable computer systems.

When taking this module, you will examine the notion of 'interaction with technology'. You will focus on the concepts behind modern user experience design and production. You will gain a solid grasp and practical experience of the process which allows the creation of interactive systems.

Module goals and objectives

Upon successful completion of this module, you will be able to:

CLO1	Explain the main areas of HCI theory and practice and describe a set of design approaches that embody the theory and practice
CLO2	Use appropriate design approaches and interaction prototyping methods to develop new interfaces and technologies
CLO3	Make use of usability and interaction design concepts in critiquing, using and building interactive solutions for a range of applications
CLO4	Use appropriate evaluation techniques to constructively criticise interface designs and explain how they can be improved
CLO5	Explain new application areas and up-and-coming advanced technologies and explore these in the design of interactive systems and applications

Textbook and Readings

Specific essential readings for each week are described on the platform, drawn from academic journals and conference proceedings. You will use the UOL online library to access these resources and they are signposted on the platform for each activity.

<https://onlinelibrary.london.ac.uk/>

Module outline

The module consists of ten topics that focus on key areas of the fundamentals of computer science.

Topic 1.	<p>Key concepts:</p> <ul style="list-style-type: none">• Double Diamond approach to Design• The history of Interaction Design• The scope of interaction design <p>Learning outcomes:</p> <ul style="list-style-type: none">• Differentiate between the different phases of interaction design• Distinguish which design tasks relate to interaction and which don't• Be able to defend the necessity of interaction design
Topic 2.	<p>Key concepts:</p> <ul style="list-style-type: none">• Modelling the user - perception/cognition/motor• User mental models• Existing models eg Fitts' Law and GOMS <p>Learning outcomes:</p>

	<ul style="list-style-type: none"> • Apply interaction design models to real world tasks • Discuss differences between mental and system models
Topic 3.	<p>Key concepts:</p> <ul style="list-style-type: none"> • Interviews and Focus groups • Observational Studies • Analysing large scale data <p>Learning outcomes:</p> <ul style="list-style-type: none"> • Choose the appropriate method for data collection • Formulate questions to guide user research • Design appropriate plans to run specific user research
Topic 4.	<p>Key concepts:</p> <ul style="list-style-type: none"> • User requirements • Heuristic evaluation • Information architecture <p>Learning outcomes:</p> <ul style="list-style-type: none"> • Generate user requirements from collected data • Evaluate existing systems from an interaction design perspective • Design appropriate information architecture
Topic 5.	<p>Key concepts:</p> <ul style="list-style-type: none"> • Prototype fidelity • Wireframes • Prototype functionality

	Learning outcomes: <ul style="list-style-type: none"> • Differentiate between low and high fidelity prototypes • Choose the appropriate prototype for a specific interaction design • Create wireframes for 2D interactions
Topic 6.	Key concepts: <ul style="list-style-type: none"> • Accessibility standards • Considerations for accessibility • Augmentation technologies Learning outcomes: <ul style="list-style-type: none"> • Defend the need to consider accessibility during the design process • Discuss the differing types of accessibility that should be considered • Create designs which account for accessibility requirements
Topic 7.	Key concepts: <ul style="list-style-type: none"> • Slips and mistakes • Post completion errors • Designing against error Learning outcomes: <ul style="list-style-type: none"> • Differentiate between slip and mistake errors • Evaluate the possibility for human error • Choose appropriate designs to minimise risk of error
Topic 8.	Key concepts: <ul style="list-style-type: none"> • Controlled experiment methods • Controlled experiment terminology • Introduction to basic statistical analysis

	<p>Learning outcomes:</p> <ul style="list-style-type: none"> • Discuss the difference between qualitative and quantitative data • Design a controlled experiment that is aimed at collecting the required data • Understand the need for statistical analysis
Topic 9.	<p>Key concepts:</p> <ul style="list-style-type: none"> • A/B testing • Diary studies + Observations • Cognitive walkthrough <p>Learning outcomes:</p> <ul style="list-style-type: none"> • Argue for the inclusion of late-stage evaluation in a design process • Construct a late stage evaluation plan • Differentiate between the merits of differing methodologies
Topic 10.	<p>Key concepts:</p> <ul style="list-style-type: none"> • Affective Computing • Crowd sourcing <p>Learning outcomes:</p> <ul style="list-style-type: none"> • Discuss the positives and negatives of using crowdsourcing in interaction design • Discuss the differences between affective computing styles • Research new and future technologies and assess how interaction design has affected their form

Activities of this module

The module is comprised of the following elements:

- **Lecture videos.** In each week the concepts you need to know will be presented through a collection of short video lectures. You may stream these videos for playback within the browser by clicking on their titles or download the videos. You may also download the slides that go along with the videos.
- **Readings.** Each topic may include several suggested readings. These are a core part of your learning, and, together with the videos, will cover all of the concepts you need for this course.
- **Practice Quizzes.** Each week will include one or more practice quizzes, intended for you to assess your understanding of the topics. You will be allowed unlimited attempts at each practice quiz. Each attempt may present a different selection of questions to you. There is no time limit on how long you take to complete each attempt at the quiz. These quizzes do not contribute toward your final score in the module.
- **Discussion Prompt.** Each week include one or more discussion prompts. You will see the discussion prompt alongside other items in the lesson. Each prompt provides a space for you to respond. After responding, you can see and comment on your peers' responses.

How to pass this module

The module has two major assessments each worth 50% of your grade:

- **Coursework:** this consists of several practical considerations around the topic, where you need to explain, describe and analyse solutions to problems presented and answer questions that cover specific elements of the course.
- **Written examination:** you will take this at an examination centre in your country.

Activity	Required?	Deadline week	Estimated time per module	% of final grade
Written, staff graded coursework	Yes	11	Approximately 20 hours	50%
Written examination	Yes	22	2 hours 15 minutes	50%