

COMP1650 – User Interface Design



Introduction to the course

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Dr. Ralph Barthel

Structure of this lecture

- ❑ About the delivery team
- ❑ Overview of the course
 - ❑ Schedule
 - ❑ Learning outcomes
 - ❑ Assessment
 - ❑ Course texts
- ❑ Introduction to User Interfaces and User Interface Design

Course delivery team



Dr. Fotis Spyridonis

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My office hours: Monday 12:00-13:00 and
Friday 12:00-13:00

Research in Human-Computer
Interaction, Interaction Design, and more
recently, Gamification



Dr. Ralph Barthel

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My office hours: Tuesday 15:00-16:00 and
Thursday 14:00-15:00

Research in technology-enhanced learnings,
human-computer interaction and applications of
Internet of Things technologies

Welcome to talk to us and email us!

Schedule

❑ Lectures

- ❑ Weeks 1-12
- ❑ Thursday 10:00-12:00
- ❑ QA280
- ❑ Understanding of the area – supported by your reading
- ✓ Overview of tools and techniques

❑ Labs

- ❑ Weeks 1-12
 - ❑ Thursday 12:00-14:00
 - ❑ KW215, KW015 and KW116 (Black) (as per your individual timetable)
 - ❑ Knowledge of relevant tools
 - ✓ Support the coursework
- ✓ Any Timetable clashes?

Introduction to user interface design

In small groups discuss... (5 min)

- What do you think User Interfaces are?
- In your opinion, why is User Interface Design important?

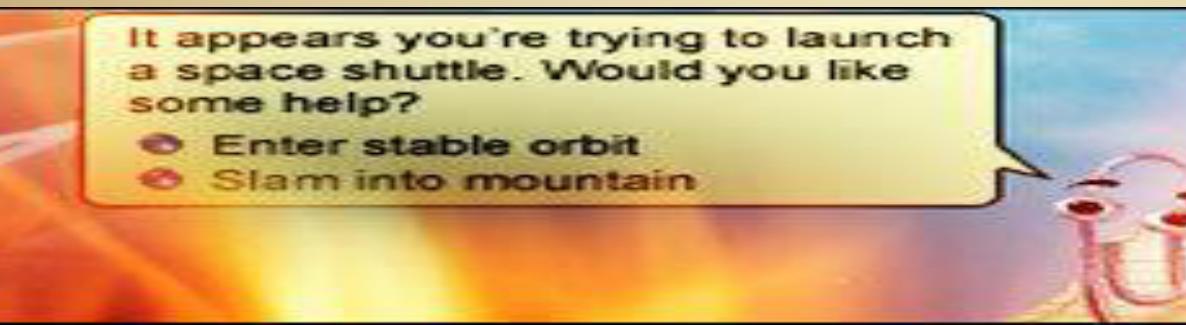
The user interface...



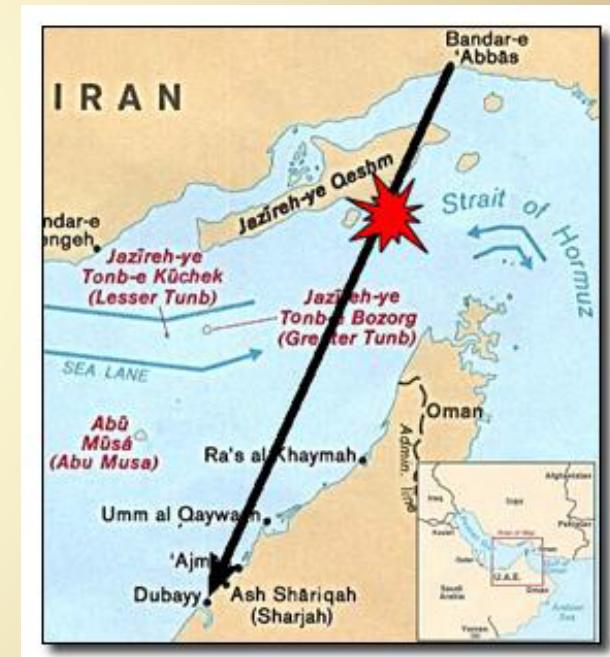
- System users often judge a system by its interface rather than its functionality;
- Poor user interface design is the reason why so many software systems are **never used**;
- A poorly designed interface can cause a user to make **catastrophic** errors!

It appears you're trying to launch a space shuttle. Would you like some help?

- Enter stable orbit
- Slam into mountain



- The United States warship USS Vincennes shot down a civilian plane because the interface on their radar system showed the operator what objects were detected on radar, and if he clicked on an object, it would track it. But if the operator wanted to get more information about the object (in this case, by listening in on its radio signals) to find out what it actually was, he had to move a separate cursor and click on the object again.
- The operator in the USS Vincennes thought he was listening to the incoming aircraft (the Airbus full of innocent people), because that's the thing he selected, when he was actually receiving signals from a parked F-14 several miles away, because that's where his other cursor was.



User-system interaction

- Two problems must be addressed in user interface design:
 - How should information from the user be provided to the computer system?
 - How should information from the computer system be presented to the user?
- User interaction and information presentation may be integrated through a **coherent framework** such as a **user interface**

So, why choose this course?

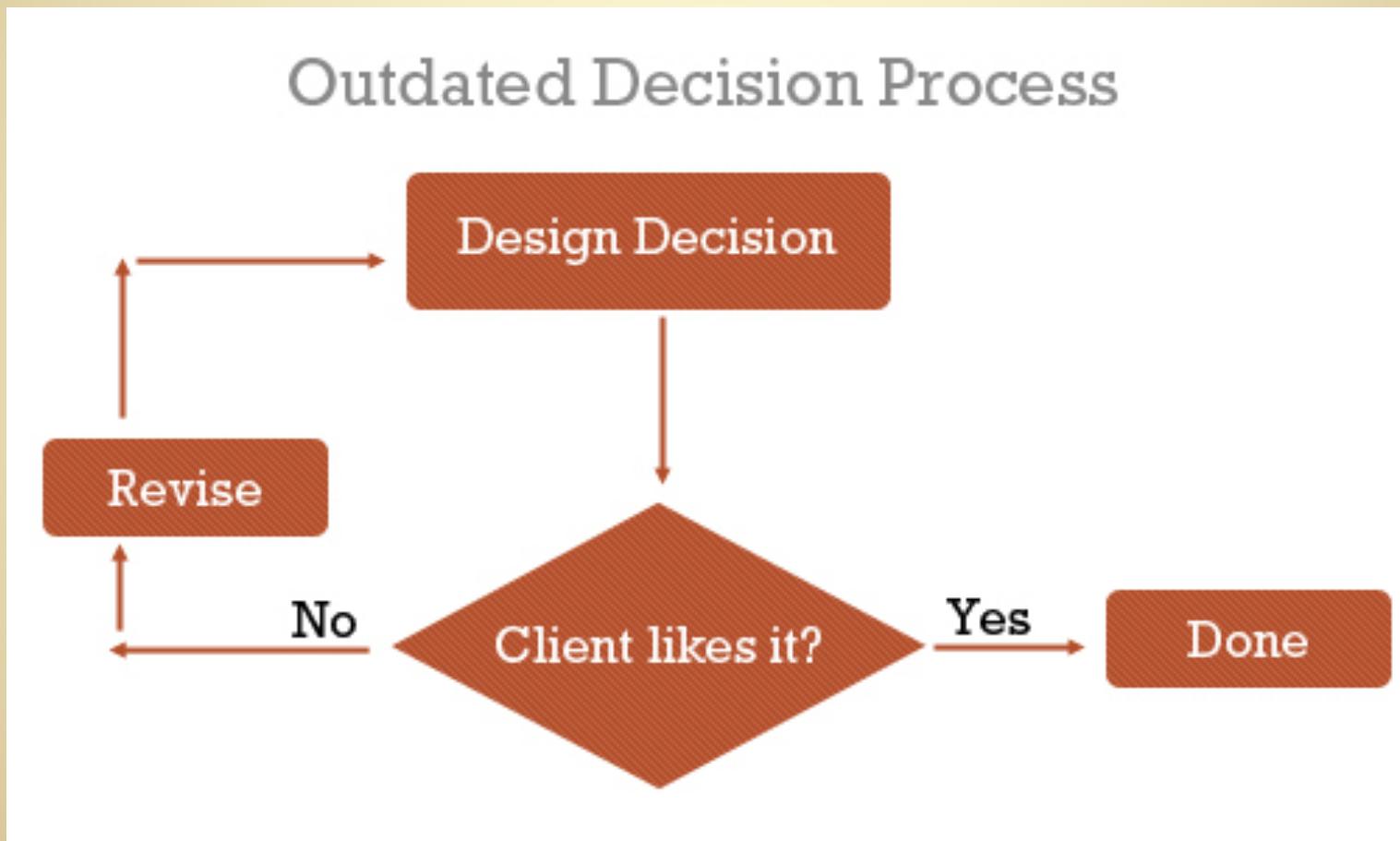
This course complements your other courses, because although the technology runs the system, it is the **interface** that provides the user with the functionality of that system. However, users often interact with the system in ways the developer did not envisage and this can lead to software disaster:

- In 2008, 9 patients' deaths were attributed to users misunderstanding the interface of new medical pump machines (Infusion Pump Recall, 2009).
- Some vending machines can never dispense anything from column 10 or higher, because as soon as you ask for row "C" (for instance) and press "1" for the first digit of the column you want, you get product C1.

Student feedback from last year...

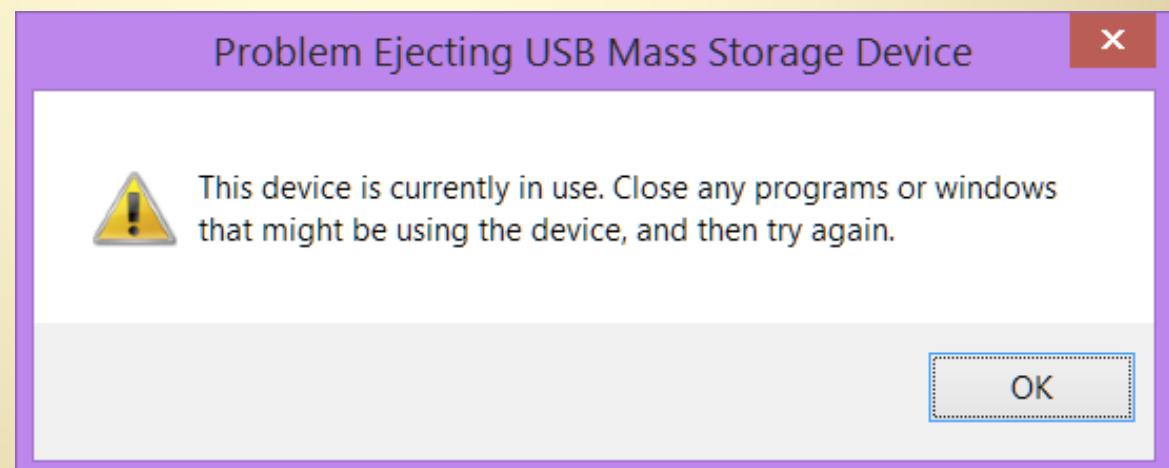
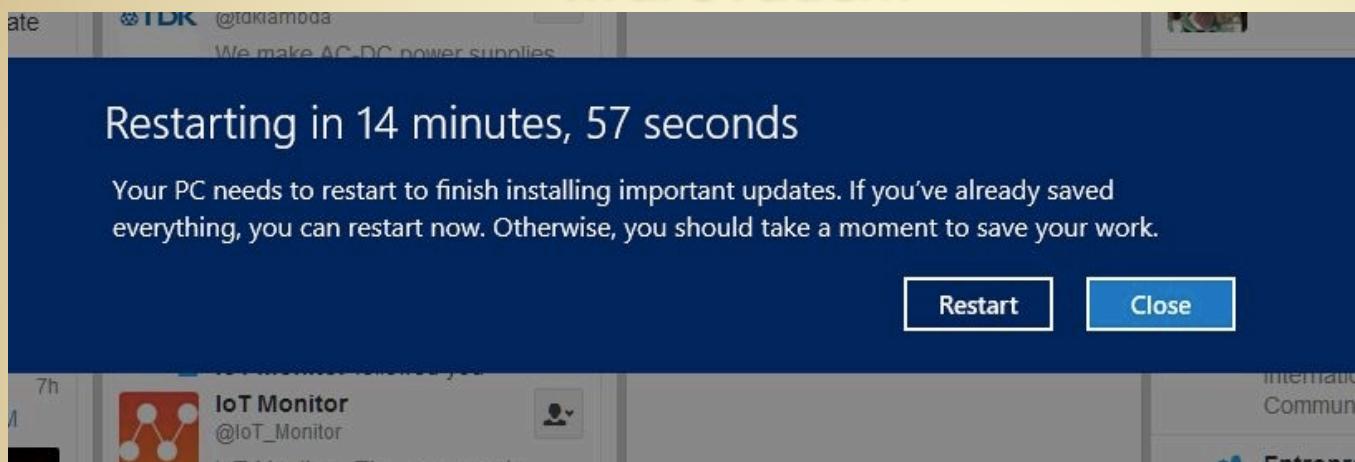
- “Topic areas covered furthered my understanding of various aspects which should be considered when developing an application - I have an improved appreciation for UI design”
- “Interesting topics and relevant to industry”
- “Really enjoy the group discussion work/activities during the lectures...”
- “The constant feedback”

Remember the ‘developer-centred’ world?



Digital products...

...are rude...



...require people to think like computers..

In the 'developer-centred' world...

- ❑ Having a product that worked is more important to not having a product at all! But, what about its usability?
- ❑ Technologically-focused solutions that are difficult to use and control.
- ❑ Great minds: Gary "Steve" Wozniak and Steve Jobs (Apple), Bill Gates (Microsoft), Larry Page (Google), Mark Zuckerberg (Facebook) and many more...

But...

- ❑ Technology is maturing (both easier and cheaper);
- ❑ Increasing number of ways to access information e.g. mobile devices, several browsers, smartwatches, etc.
- ❑ What is the solution?

Good or poor design?



Photograph courtesy of Baddesigns.Com

Good or poor design?



Photographs courtesy of Baddesigns.Com

Good or poor design?



Good or poor design?

Log in / create account

Article Discussion Read View source View history Search

Wikipedia

From Wikipedia, the free encyclopedia

For Wikipedia's non-encyclopedic visitor introduction, see [Wikipedia:About](#).

Wikipedia (IPA: /wɪkɪpiːdɪə/ or IPA: /wɪkɪpiːdɪə/ **wik-i-PEE-dee-ə**) is a free, web-based, collaborative, multilingual encyclopedia project supported by the non-profit [Wikimedia Foundation](#). Its 18 million articles (over 3.6 million in English) have been written collaboratively by volunteers around the world, and almost all of its articles can be edited by anyone with access to the site.^[3] Wikipedia was launched in 2001 by Jimmy Wales and Larry Sanger^[4] and has become the largest and most popular general reference work on the Internet,^{[2][5][6][7]} ranking around seventh among all websites on [Alexa](#) and having 365 million readers.^{[2][8]}

The name *Wikipedia* was coined by Larry Sanger^[9] and is a portmanteau of *wiki* (a technology for creating collaborative websites, from the Hawaiian word *wiki*, meaning "quick") and *encyclopedia*.

Wikipedia's departure from the expert-driven style of encyclopedia building and the large presence of unacademic content has been noted several times. When *Time* magazine recognized You as its Person of the Year for 2006, acknowledging the accelerating success of online collaboration and interaction by millions of users around the world, it cited Wikipedia as one of several examples of Web 2.0 services, along with YouTube, MySpace, and Facebook.^[10] Some have noted the importance of Wikipedia not only as an encyclopedic reference but also

Wikipedia
The logo of Wikipedia, a globe featuring glyphs from many different writing systems

Screenshot [show]

URL wikipedia.org

Slogan The free encyclopedia that anyone can edit.

Commercial? No

What makes a poor user interface...

- Digital products that irritate, reduce productivity, and fail to meet user needs;
- Don't provide an engaging or enjoyable experience;
- “Technology that does not work the way they expect makes people feel stupid.”
- “If you intend to drive people away from your site, it's hard to imagine a more effective approach than making them feel stupid.” (JJ Garrett)

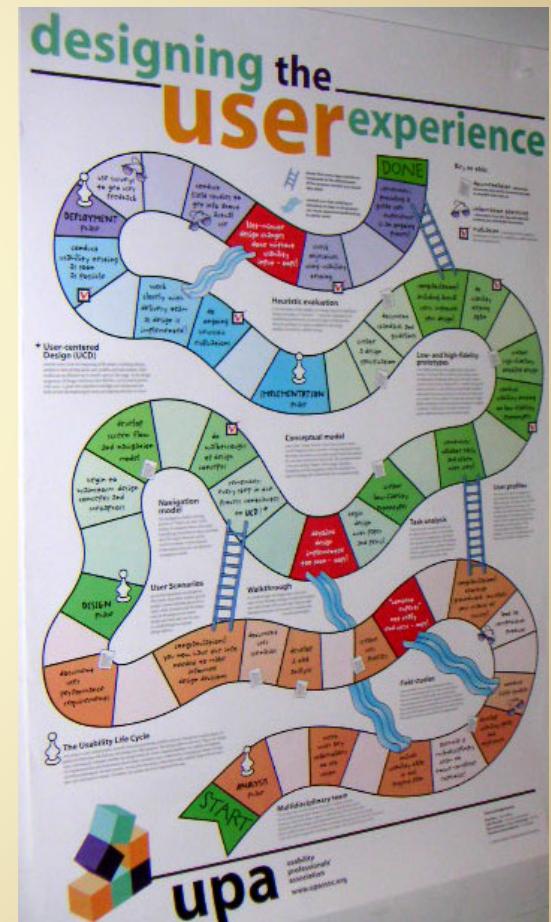
Beyond usability...

For a meaningful and valuable user interface, information must be:

- ◆ Useful – fit for purpose and environment?
- ◆ Usable – design is not the main outcome, human behaviour is
- ◆ Desirable – emotional design, attractive
- ◆ Findable – navigation, location
- ◆ Accessible – cater for all types of users abilities and context
- ◆ Credible – is the design trustworthy?

How do we create a good user interface?

- ❑ A user interface is not one size fits all; it won't work in every situation for every user
- ❑ We must design for specific user desires, needs, motivations, and contexts
- ❑ A design must be tailored to business goals, values, production process and constraints
- ❑ **User-centred design:** take the user into account in every step of the way. More in next week's lecture...



The course aims are to :

- provide you with an understanding of the current practice in human computer interface development and evaluation;
- provide you with the knowledge of how user-centred design helps to build user interfaces, which are accessible, easy to learn and friendly to use;
- enable you to gain an appreciation of the concepts of colour theory, font terminology, layout and graphic design elements in terms of visual user interface design.

Learning Outcomes

This lecture and the associated activities provide the underpinning knowledge that contribute to the learning outcomes of:

1. understand the issues involved in developing and evaluating interfaces to interactive applications;
2. demonstrate an awareness of human-computer interface standards and guidelines;
3. apply the principles, concepts and models of user-centred design methods to the development and evaluation of interactive system interfaces;
4. apply the concepts of colour theory, font terminology, layout and graphic design elements in terms of visual user interface design.

Areas of study

- Web and mobile user interface design
- User-centred design
- Visual design and aesthetics
- Information architecture
- Prototyping
- Evaluation
- Schedule of Work



More in the Lectures and labs...

Teaching and Learning Activities

- Concepts will be introduced in the lecture and practical exercises and problem solving will be done through tutorials and labs.
- Student time will be: Lecture 1/3, Tutorial 1/3 (note these two activities take place in what your timetable refers to as a Lecture), and Laboratory 1/3 in tutor groups.

Small group task

Screen Locations – where should the slides be projected in this classroom?

- Identify the users of the room and their critical tasks; (5 min)
- Explore how to design this room with users and their needs in mind; (5 min)
- How can we evaluate the prototype to provide data and insight of its usefulness, usability and effectiveness? (5 min)



Well done! You just completed your first design task!

Course Assessment

- 100% Coursework
- Specified in the the coursework brief
 - Development and evaluation of a user interface for a given specification.
 - Mapped to the learning outcomes for this course.
- Individual (not group)
- Distributed and discussed in Week 1 Lab sessions



Feedback is important!

We provide feedback every time you:

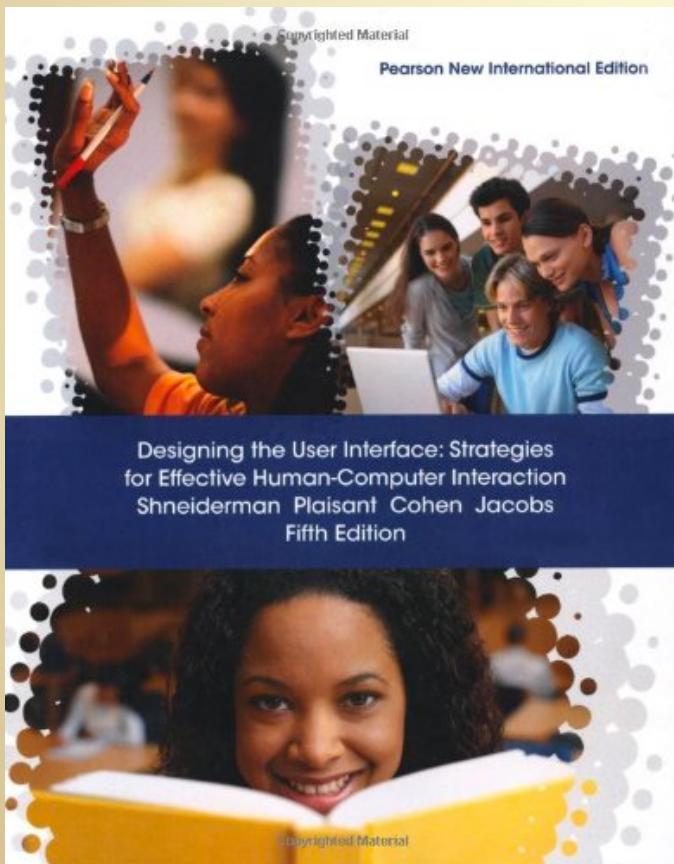
- ask questions
- complete tutorials
- upload the interim deliverable
- post questions on the forum

We:

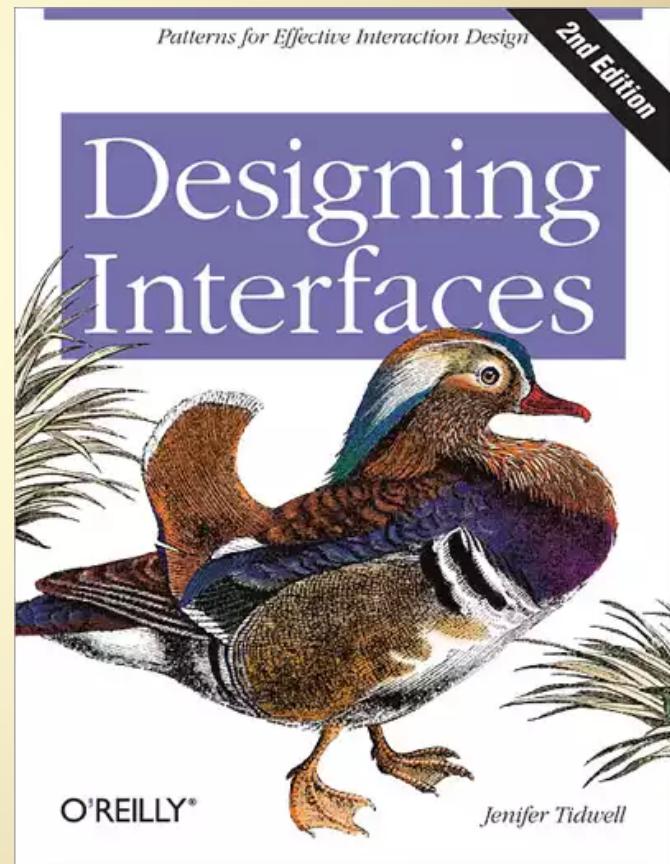
- ask about your progress in the labs
- discuss the progress of your coursework
- see your prototype developing

Key Texts

Shneiderman, Plaisant, Cohen and Jacobs. *Designing the User Interface: Strategies for Effective Human-Computer Interaction*. Latest edition. Pearson.

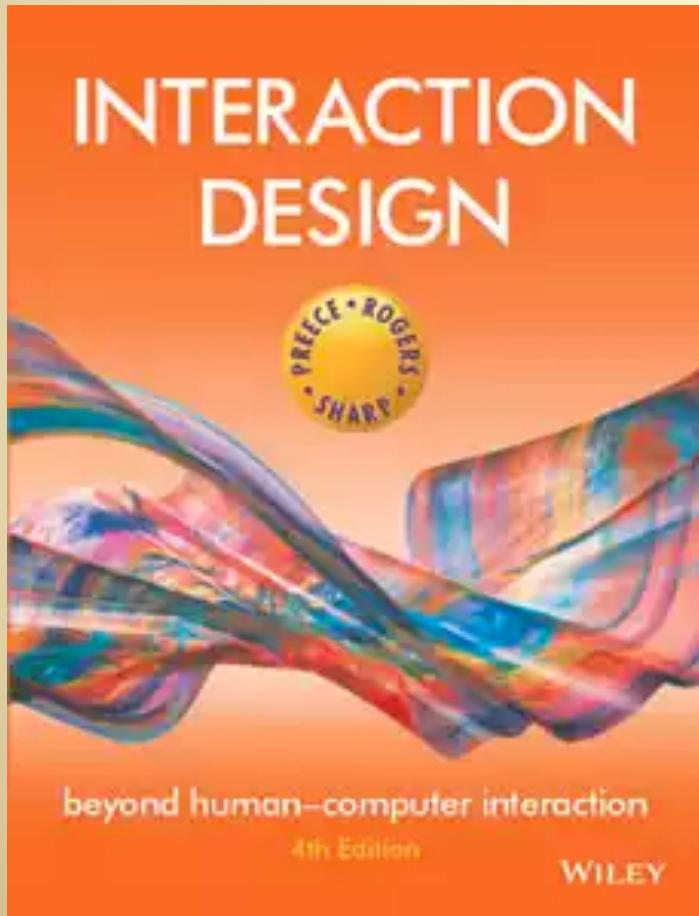


Tidwell, J. (2010). *Designing Interfaces*.
O'Reilly Media

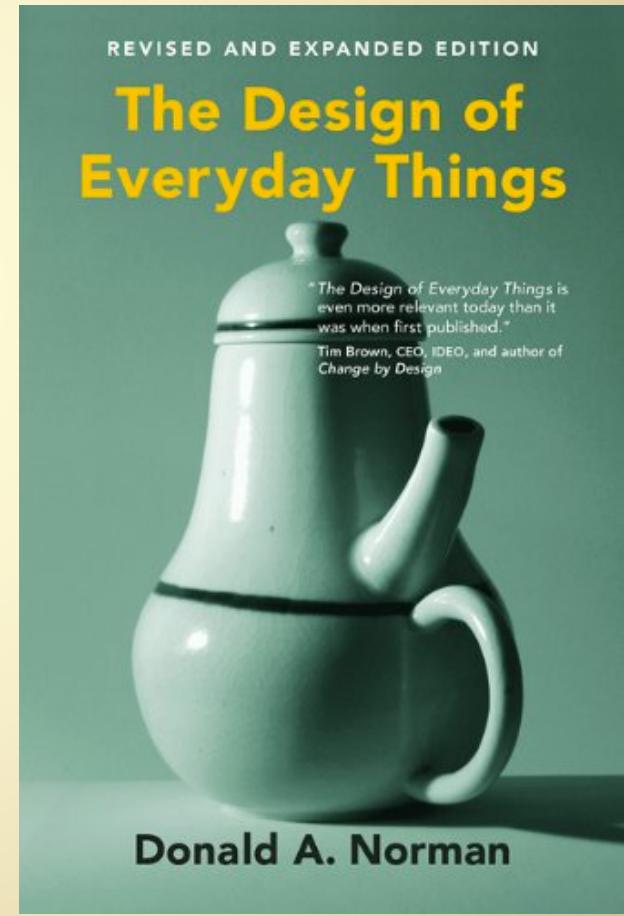


Other Recommended

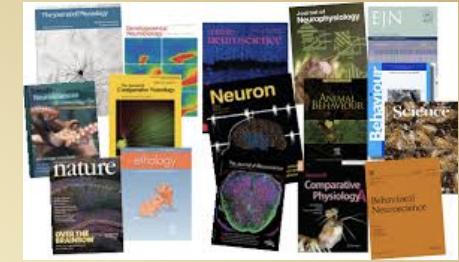
Rogers, Sharp and Preece (2015). *Interaction Design: Beyond Human-Computer Interaction*. 4th Ed. Wiley.



Norman, D. (2013). *The Design of Everyday Things*. 2nd Ed. MIT Press.



Journals



- ACM SIGHCI
- Computers in Human Behaviour
- Interacting with Computers (British Computer Society: Human Computer Interaction Special Interest Group)
- International Journal of Human-Computer Interaction
- Interactions Magazine (BCS, British Computer Society)
- Journal of Usability Studies (UXPA, User Experience Professionals Association)
- User Experience Magazine (UXPA, User Experience Professionals Association)

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About

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We are a global network dedicated to the professional practice of Interaction Design.

With the help of more than 70,000 members since 2003, the IxDA network provides

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Are you new to Interaction Design?

We can help you with some common questions, like:

- How can I get an interaction design job?
- Where can I go to school to learn about interaction design?
- What sort of tools and techniques can I use in my day to day job?
- Where can I meet other interaction designers in my community?

Are you an experienced, seasoned IxD pro?

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<https://www.interaction-design.org/literaturedaily/>

The Interaction Design Foundation website features a prominent banner at the top with a textured, monochromatic background. The text "Open Access" is visible in large, semi-transparent letters. Overlaid on the banner is a white text block containing the slogan: "Here's something we strongly believe in: design education should be affordable". Above the banner, the Interaction Design Foundation logo is displayed, along with navigation links for UX COURSES, COMMUNITY, LITERATURE, and ABOUT IDF, and a "Join our community" button.

OPEN SOURCE, OPEN ACCESS LITERATURE

The democratisation of design knowledge is core to our mission. That's why we are bringing together leading designers, bestselling authors and Ivy League professors to create open source, free-to-access textbooks on UX and design. This is the world's most comprehensive compendium of design knowledge, made available to everyone around the world.

The Encyclopedia of Human-Computer Interaction, 2nd Ed.

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16 HOURS AGO

[How to Conduct User Interviews >](#)
18 HOURS AGO

How user interface design maps to your Final Year Project

This course maps to the first part of the software life cycle, and everything we do can be used in your **project** if you are going to develop an interface for databases, a mobile app, games, websites or any other piece of software.

How will studying this course help you in your degree and future career?

You will be able to:

- decide between different interface alternatives and justify your choice;
- understand why users are the biggest source of errors in any system and be able to carry out usability testing and evaluation to reduce this factor;
- it closely maps to the software lifecycle from the user viewpoint;
- appreciate the key issues when designing for mobiles, touch screen interfaces, electronics and robots;
- today it is all about the interface and usability.

And finally, we hope you:

Enjoy it

