Designing Human-Computer Interaction – 6389

Unit Outline 2009

Faculty of Information Sciences and Engineering

University of Canberra

Australian Government Higher Education (CRICOS)
Registered Provider number: #00212K

This Unit Outline must be read in conjunction with:

a) *Studying at the University of Canberra: A Guide to Policies and Procedures*, which sets out University-wide policies and procedures, including information on matters such as plagiarism, grade descriptors, moderation, feedback and deferred exams, and is available at http://www.canberra.edu.au/student-services

b) *Guide to Student Services at the University of Canberra*, and is available at http://www.canberra.edu.au/student-services

c) Any additional information specified in section 6f.

1: General Information

1a Unit title: **Designing Human-Computer Interaction**

1b Unit number: **6389**

1c Semester and year offered: **Semester 1, 2009**

1d Credit point value: **3**

1e Unit level: **2**

1f Name of Unit Convener and contact details (including telephone and email)
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Name of Unit Moderator and contact details (including telephone and email):
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1g Administrative contact details (including name, location, telephone and email)
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2: Academic Content

2a Unit description and learning outcomes

Syllabus

This unit provides the theory and practices needed to design and specify the user requirements for an information system. Emphasis is placed on user-centred design, designing for use, and the design of human-computer interaction. Group work and communication are central to information systems design and techniques for managing group work and communicating and sharing ideas are explored. Relevant sections of Australian and other standards and guidelines dealing with software ergonomics and software usability are discussed.

Learning Outcomes

On successful completion of this unit students will be able to describe, discuss and evaluate the information systems design process and specify user requirements. They will be able to explain some key issues about group work communication processes. They will be able to undertake a small information systems design project, applying user-centred design techniques and addressing issues in human-computer interaction. They will also be able to apply policies and procedures from relevant guidelines and standards.

2b Prerequisites and/or co-requisites

Information Systems in Organisations (6348), and Professional Communication Skills (4493) or Professional Practice in IT (7722).

Note: If you do not have the pre-requisites you are required to withdraw from the unit, or consult with the lecturer.

3: Delivery of Unit and Timetable

3a Delivery mode

On-campus with weekly lectures and with tutorials and laboratory sessions as specified in the timetable.

3b Schedule of topics/lectures/tutorials/practicals/field classes by day

Designing Human Computer Interaction has one two-hour lecture scheduled each week: Wednesday: 10.30 – 12.30 in 6B45. Students will also need to select one tutorial/lab from the list on the timetable. Timetables and schedules: schedules of topics to be covered will be included on the unit website in due course. Details may change during the semester if the need arises.

4: Unit Resources

4a Lists of required texts / readings

The required text book for the unit is:
Te'eni, D, Carey, J, Zhang, P 2007, *Human Computer Interaction*, Wiley & Sons

Other recommended text
Heerkens, G 2002, *Project Management*, McGraw-Hill

For use cases and activity diagrams:
Constantine, LL and Lockwood, LAD 1999, *Software for Use: A Practical Guide to the Models and Methods of Usage Centered Design* ACM Press, Addison-Wesley

Fowler, M 2004, *UML Distilled: A Brief Guide to the Standard Object Modelling Language* (3rd ed., Boston: Addison Wesley), Chapter 11
Larman, C. (1998) *Applying UML and Patterns* Prentice Hall

Satzinger, JW, Jackson, RB & Burd, SD 2005, *Object-Oriented Analysis and Design with the Unified Process* (Boston: Thomson), Chapter 5

A good text on user interface design specifically is:
Cox, K & Walker, D 1993, *User-Interface Design* 2nd Edition, Prentice Hall

Some other good books are:
Cooper, A 1999, *The Inmates are Running the Asylum*, SAMS

Cooper, A and Reimann, R 2003, *About Face 2.0. The Essentials of Interaction Design.* Wiley

Dix, A, Finlay, J, Abowd, GD and Beale, R 2004, *Human-Computer Interaction* (3rd edition), Prentice Hall

Krug, S 2000, *Don't Make Me Think. A common sense approach to web usability.* New Riders Publishing

Preece, J, Sharp, H and Rogers, Y 2002, *Interaction Design*, John Wiley & Sons, Inc.

Raskin, J 2000, *The Humane Interface*, Addison-Wesley

Key reference material on accessibility and related matters are as follows:

AGIMO publish their "Guide to Minimum Web Site Standards" at http://webpublishing.agimo.gov.au/ - more particularly at http://www.finance.gov.au/e-government/better-practice-and-collaboration/better-practice-checklists/testing-websites.html. AGIMO have their "better practice" checklists (not just web) at http://www.agimo.gov.au/practice/delivery/checklists.

The Australian Governmen Locator Service (AGLS) Metadata standard is set out in the AGLS Metadata Element Set:
http://www.naa.gov.au/recordkeeping/gov_online/agls/metadata_element_set.html
Guidance on implementing the AGLS standard is in the *Commonwealth Implementation Manual: AGLS Metadata*
http://www.naa.gov.au/recordkeeping/gov_online/agls/cim/cim_manual.html

Online databases provide further reference material, in particular the journals of the ACM (there is an ACM portal for computing literature as well). This is available at http://portal.acm.org/portal.cfm then search for material. There is also an HCI bibliography at http://www.hcibib.org/ that is another good starting point for research.

There is a library session offered on week 3 through which you can learn more about online resources – make sure you take advantage of this.

4b Materials and equipment

None required apart from preparation of assessment items e.g. the research posters developed as part of your research project, presentations to class, preparation of assignments and reflections.

Students are required to use computers to access resources in this unit and to do some assessable work that involves the use of computers. Computing resources for this unit are available in the laboratories on levels A and B in Building 11. Some laboratory sessions have been booked to support this unit.

4c Unit website

The lecturer will use your student email account and the unit Web site (http://learnonline.canberra.edu.au/studentSupport.php) to make available dynamic information related to some of the administration of the unit. It is your responsibility to check your student email account, or unit Web site, on a regular basis.

5: Assessment

5a Assessment overview

Assessment Item (including exams held in the exam period)	Due Date of Assignments	Weighting (to equal 100%)
1. Usability Evaluation (individual)	Week 4	10%
2. Web Design Issues (group work)	Week 6	15%
3. Design Project (group and individual)	Weeks 7, 10, 11, 12, 13 & 14	45%
4. Exam	Exam period	30%

Each assignment submission must have a cover sheet with the student's name, student number, and a signed declaration that the submission is the student's own work. If the assignment is a group assignment, the cover sheet must have this information for each student in the group. A sample sheet is attached at the end of assignments 1 and 2.

In all submitted written work, the author-date or 'Harvard' system should be used for referencing. This is outlined in the University Library Citation Guide at: http://www.canberra.edu.au/library/research-gateway/research_help/referencing-guides.

Students should keep a copy of any assessment item that has been submitted. Your lecturer or tutor may, and can, request that you resubmit your assignment for assessment, for example, in the case of an assessment item being mislaid or in the case that the assessment item appears not to have been submitted at all.

NOTE: Students who do not attend tutorial or lab sessions where they are required to present assessable work will receive a mark of zero for that assessment item.

5b Details of each assessment item

Usability Evaluation (10%) – individual work.
You need to undertake a usability evaluation of a website and submit your findings in a formal usability report to your tutor at the designated time. Your tutorial preparation work in weeks 2, 3 & 4 will assist you greatly in your completion of this task. It is highly recommended that you participate in these tutorials for guidance and formative feedback. Your tutorial preparation work towards this task will be considered by your tutor in assigning marks.

Web Design Issues (15%) – group work.
This assignment involves the selection of a website from a list of given sites; carrying out an evaluation of the interface design for a given scenario using HCI design principles, practices and standards; development of a short presentation to present your findings; and writing of a short paper outlining 'how to design good websites that confirms to standards?'. The presentation and the short paper (2 pages) are done by a small group of 3 – 4 people. The short paper is expected to contain a proper bibliography. It is envisioned that the work for this assignment will greatly assist you in your splash screen design for the Design project.

The detailed assessment criteria for these items are included in the full description of the assignment but, overall, the work must use industry standards and HCI design practices that are current, be clearly presented and include references to current literature.

Design Project (45%) – group and individual work.
This is your major assignment and is undertaken as group work (groups of 3-5). The first 5 parts of the assignment are group work. You are required to undertake an analysis and design task that involves understanding user requirement and developing a requirements specification based on a user centred, prototyping approach. Assessment is progressive and ensures students receive feedback during the design process. The written submission includes the requirements specification and considerable supporting documentation.

An individual reflection is included as the last part of this assignment and includes a mark of your perception of you, and your group's, contribution to the project.

The assessment stages / items are as follows. The assignment will be marked and graded out of 100 overall with the mark / grade then converted to reflect the assignment's weighting of 40% for the unit. Marks will be assigned as follows:

Group Marks	
Presentation of the splash screen design to the client (week 10 tutorial) and report on justification of the design and conformance to standards	10%
Conduct of a design review (week 11 tutorial) and report on design review in final design package	10%
Conduct of a usability evaluation (week 12 tutorial) and report on usability test in final design package	10%
Presentation of the prototype system(s) to the class (week 13 tutorial)	15%
Overall Usability of the prototype / quality of the interaction	10%
Design package (documentation)	25%
Individual Marks	
Debriefing report (reflection)	10%
Participation in group	10%

The detailed assessment criteria for these items are included in the full description of the assignment but generally your project will be assessed on the basis of the quality of your processes and the quality of your outcomes.

Further details for each assessment item will be made available in future documents and these will be available on the web site. Timing details for submission of assessment items are given in the proposed unit timetable above.

All assignments are required to be submitted on the due date. If, for any reason, you are unable to do an assignment by the due date you must submit, to the lecturer or your tutor, a request for an extension in writing **before** the due date setting out in detail the genuine and exceptional reason for requesting the extension. If there is a medical reason for the extension request it must be accompanied by a medical certificate (see below).

Medical certificates.
Your medical certificate must clearly state:

- That you were unfit to complete the assignment;
- The date of the medical consultation;

- The period during which you were / are / will be unfit; and
- The severity of your illness.

Generally, resubmission of an unsatisfactory assignment is not an option in this unit.

Late and (if requested by the lecturer / tutor) resubmitted assignments may not count fully towards the determination of your grade. A late assignment will incur a penalty of 3% of the total possible marks for that assignment, per day it is late. A resubmitted assignment (if requested by your tutor / lecturer) can gain at most 50% of the total available marks for that assignment.

If there is any doubt with regard to the requirements of any assignment or assessment procedure, the onus for clarifying the issue rests with the student who should contact the lecturer about the matter. Tutors will also be happy to assist in this regard.

Exam (30%).
For the examination, students may take in a language dictionary (no calculators or technical dictionaries are permitted in the exam).

5c Special assessment requirements

In order to pass this unit, students have to obtain a mark of 50% or greater for the assessment as a whole, and 50% or greater in total for the two quizzes. Higher grades will generally be awarded on the basis of the total mark being ≥65 for a credit, ≥75 for a distinction and ≥ 85 for a high distinction. Moderation of marks will be conducted across all tutorial groups.

5d Supplementary assessment

Students who have failed a single unit in their final semester with a final mark between 45-49% and where the unit is required for course completion, are eligible for not supplementary assessment.

5e Text-matching software

Text matching software may be used in this unit. If so, full details will be provided in the assignment(s) in which it is to be used, and also discussed in the lecture at which the assignment(s) is discussed.

6: Student Responsibility

6a Workload

The amount of time you will need to spend on study in this Unit will depend on a number of factors including your prior knowledge, learning skill level and learning style. Nevertheless, in planning your time commitments you should note that for a 3cp Unit the total notional workload over the fifteen week semester is assumed to be 150 hours or an average of 10 hours per week. These hours include time spent in classes. The total workload for Units of different credit point value should vary proportionally.

6b Special needs

Students who need assistance in undertaking the unit because of disability or other circumstances should inform their Unit Convener or the Disabilities Office as soon as possible so the necessary arrangements can be made.

6c Attendance requirements

Students are not *required* to attend any class as far as gaining a result is concerned. However, students are *expected* to attend lectures, tutorials and laboratory sessions. Many tutorial and laboratory sessions are based on group work so it is important that all group members attend. If a group member cannot attend a tutorial or laboratory session then they are expected to inform their group of this and also the lecturer. Tutorials are used to review assignment work-in-progress, for presentations and for tutorial exercises and lab work.

Announcements are made throughout the unit, typically to clarify requirements for assignments. Any such announcements made on the unit web site are deemed, within two working days, to be made to the whole group.

Announcements made at lectures are deemed to be made to the whole group. Hence, it is desirable that you attend lectures and that you consult the web site regularly.

6d Required IT skills

You are expected to have the IT skills specified in the Handbook for admission to the course, to be interested to use IT in work and learning, and to take an active interest in developing your IT skills, especially in the area of systems prototyping.

6e Costs

There are no additional fees associated with this unit. You will incur some costs in the preparation of your research poster (good posters do not need to be expensive) and in printing your work in the computer labs (standard UC printing costs apply). You will also incur the cost of any text books you acquire, storage media, etc and use of the web (if this goes beyond the standard web access allocation). There is no requirement to use the web excessively in this unit but it will prove a valuable research tool.

6f Additional information

A note about group work

DHCI provides an opportunity to learn about, and experience, group work, possibly for the first time. Most areas of IT / IS work require working in groups or teams, so it is important to take the opportunity of working this way in an educational setting. At UC you can try out approaches to group work and learn from them in a manner different from the paid workplace. It is important that all group members contribute to the success of a group in an equitable manner, and the group works together towards this goal. Many students value this opportunity and gain a lot from this experience.

Some of you will be aware that groups do not always work cooperatively. If this occurs in your group it is your responsibility to take action immediately – initially within the group, and / or in consultation with your lecturer. **Note:** Unreported group issues cannot be considered when assessing your assignments.

Some of you may have already undertaken considerable group work in various environments. If that is the case, then you may be able to extend your knowledge and experience by contributing to a group in this unit and helping others – based on your experience. This is valuable to the class as a whole and gives you the opportunity to reflect on past experiences and share them in this environment.

Feedback

Feedback on progress may be provided to students in several ways:

- Through comments to the class in lecture times.

- Through comments in tutorial time (to the tutorial group).
- Through the unit web site – students should consult this regularly.
- On an individual or group basis (depending on the nature of the assignment), in written form, on assignments.
- By peers, in interactive class sessions.
- By email, where appropriate.
- In individual consultation in tutorials or in the lecturer's consultation time or by appointment.

Changes to DHCI from 2008.

In response to student feedback, changes have been made for the semester 2009. The following is a brief outline of the more significant changes:

- Workload of the unit has been reduced by cutting down individual work requirements in assignments
- Assignment 2 has been changed to assist students in learning about HCI design principles and industry standards.
- Changes have been made to the wording in assignments to help to provide greater clarity in assignment requirements.
- Greater emphasis will be placed on the 'ill-defined' nature of system requirements and the need for the analysis and design phases of projects to also include time for revision as new and changed requirements are revealed during the design process.
- More emphasis and time is being placed on new topic areas: namely designing for different form of interactions (i.e. mobile technology, social media & virtuality) and to a lesser extent, "project management".
- Increased emphasis on some of the generic university skills such as the processes surrounding lifelong learning and problem solving by being more explicit in expectation that students will be expected to solve, or at least attempt to solve, problems themselves and not directly be provided with answers.

7: Student Feedback

All students enrolled in this Unit will have an opportunity to provide anonymous feedback on the Unit at the end of the Semester via the Unit Satisfaction Survey which will be presented to you on OSIS. Your lecturer or tutor may also invite you to provide more detailed feedback on their teaching through an anonymous in-class questionnaire administered through the University's Teaching and Learning Centre (TLC).

8: Authority of this Unit Outline

Any change to the information contained in Section 2 (Academic content), Section 3 (Delivery of Unit and timetable) and Section 5 (Assessment) of this document, will only be made by the Unit Convener if the written agreement of staff and a majority of students has been obtained; and if written advice of the change is then forwarded to each student enrolled in the Unit at their registered term address. Any individual student who believes him/herself to be disadvantaged by a change is encouraged to discuss the matter with the Unit Convener.