SENG2260: Human-Computer Interaction
Callaghan and Ourimbah
Semester 2 - 2019

THE UNIVERSITY OF
NEWCASTLE
AUSTRALIA

OVERVIEW

Course Description	This course introduces human-computer interaction and, specifically, interaction design. The aim is to consider modern trends in the development of user interfaces from designing for usability to designing to enable user experiences. Design, testing and evaluation methods will be discussed and analysis of interfaces by experimentation on humans is described. The course includes a large practical project in which the students engineer a user interface.
Assumed Knowledge	SENG1050 Web Technologies, SENG1110 Object Oriented Programming OR INFT1004 Introduction to Programming
Contact Hours	**Callaghan** **Lecture** Face to Face On Campus 2 hour(s) per Week for Full Term **Workshop** Face to Face On Campus 2 hour(s) per Week for Full Term **Ourimbah** **Lecture** Face to Face On Campus 2 hour(s) per Week for Full Term **Workshop** Face to Face On Campus 2 hour(s) per Week for Full Term
Unit Weighting	10
Workload	Students are required to spend on average 120-140 hours of effort (contact and non-contact) including assessments per 10 unit course.

COURSE OUTLINE

CONTACTS

Course Coordinator   **Callaghan and Ourimbah**
Dr Shamus Smith
Shamus.Smith@newcastle.edu.au
(02) 4921 6175
Consultation: See flowchart ICT3.09.

Teaching Staff   Other teaching staff will be advised on the course Blackboard site.

School Office   **School of Electrical Engineering and Computing**
ICT307
ICT Building
Callaghan
+61 2 4921 5330
9.00am-1.00pm and 2.00pm-5.00pm (Monday to Friday)

SYLLABUS

Course Content   1. Foundations of HCI and Interaction Design
2. Understanding and conceptualising interaction
3. Designing for interaction
4. Affective aspects of interfaces
5. Accessibility and internationalisation
6. User-centred design and testing
7. Data gathering, analysis and interpretation
8. Empirical evaluation for HCI
9. Human factors and security issues
10. Social and ethical concerns

Course Learning   **On successful completion of this course, students will be able to:**
Outcomes   1. Define interaction design and human-computer interaction.

2. Critically explain interaction and user experience issues

3. Be familiar with conceptual models for designers and users

4. Have knowledge of design and prototyping methods for user interfaces

5. Design a user interface that employs best practice principles

6. Understand techniques of data collection, analysis and interpretation

7. Position their knowledge and skills against current social and ethical concerns

Course Materials   **Recommended Reading:**
- *Interaction Design: Beyond Human-Computer Interaction*, 5th Edition. Sharp, Rogers and
  Preece, 2019. The 3rd and 4th editions are also suitable for this course.

COMPULSORY REQUIREMENTS

In order to pass this course, each student must complete ALL of the following compulsory requirements:

Contact Hour Requirements:
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Course Assessment Requirements:
- Assessment 5 - Formal Examination: Minimum Grade / Mark Requirement - Students must obtain a specified minimum grade / mark in this assessment item to pass the course. Students whose overall mark in the course is 50% or more, but who score less than 40% in the compulsory item and thus fail to demonstrate the required proficiency, will be awarded a Criterion Fail grade, which will show as FF on their formal transcript. However, students in this position who have scored at least 25% in the compulsory item will be allowed to undertake a supplementary 'capped' assessment in which they can score at most 50% of the possible mark for that item.
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SCHEDULE

Week	Week Begins	Topic	Learning Activity	Assessment Due
1	29 Jul	Introduction to HCI and Interaction Design	Lecture, Workshop	Online Quiz 1
2	5 Aug	Understanding and conceptualizing interaction	Lecture, Workshop, Lab	Online Quiz 2
3	12 Aug	Understanding users International user interfaces	Lecture, Workshop, Lab	Online Quiz 3
4	19 Aug	Design, prototyping and construction	Lecture, Workshop, Lab	Online Quiz 4
5	26 Aug	Affective aspects	Lecture, Workshop, Lab	Online Quiz 5
6	2 Sep	Usability testing	Lecture, Workshop, Lab	Online Quiz 6
7	9 Sep	Data gathering	Lecture, Workshop, Lab	Assignment 1
8	16 Sep	Data analysis, interpretation and presentation	Lecture, Workshop, Lab	Online Quiz 7
9	23 Sep	Evaluation	Lecture, Workshop, Lab	Online Quiz 8
		Mid Semester Break		
		Mid Semester Break		
10	14 Oct	Inspections, analytics and models	Lecture, Workshop, Lab	Online Quiz 9
11	21 Oct	Human factors and security Social and ethical concerns	Lecture, Workshop, Lab	Online Quiz 10
12	28 Oct	Group presentations	Presentations	Group presentations
13	4 Nov	Revision	Lecture	Assignment 2 Final week for research awareness exercises
		Exam Period		
		Exam Period		
		Exam Period		

ASSESSMENTS

This course has 5 assessments. Each assessment is described in more detail in the sections below.

	Assessment Name	Due Date	Involvement	Weighting	Learning Outcomes
1	Assignment 1 - Low fidelity prototype	Week 7	Group	20%	2, 3, 4, 5, 6, 7
2	Assignment 2 - High fidelity prototype	Week 13	Group	20%	2, 4, 5, 7
3	Assignment 3 - Interface Presentation	Week 12	Group	10%	1, 2, 4, 7
4	Assignment 4 - Research awareness	Weeks 3-13	Individual	10%	4, 6, 7
5	Formal Examination*	Exam period	Individual	40%	1, 2, 3, 4, 6, 7

* This assessment has a compulsory requirement.

Late Submissions   The mark for an assessment item submitted after the designated time on the due date, without an approved extension of time, will be reduced by 10% of the possible maximum mark for that assessment item for each day or part day that the assessment item is late. Note: this applies equally to week and weekend days.

Assessment 1 - Assignment 1 - Low fidelity prototype

Assessment Type   Written Assignment
Purpose   At an intermediate stage in a major project, a report must outline what are the objectives, how they are being achieved, progress made towards attaining objectives and metrics used to measure whether objectives are being met. This will be reporting 'hands on' design.
Description   Report on low fidelity prototype development and testing.
Weighting   20%
Due Date   Week 7
Submission Method   Online
Assessment Criteria   See assessment specification and marking form on Blackboard.
Return Method   Not Returned
Feedback Provided   Online

Assessment 2 - Assignment 2 - High fidelity prototype

Assessment Type   Written Assignment
Purpose   At the end of a project a professional final report should be presented outlining how objectives were met, changes made during project life, decisions made and justified and a conclusion about the development and life of the interface.
Description   Final product and report.
Weighting   20%
Due Date   Week 13
Submission Method   Online
Assessment Criteria   See assessment specification and marking form on Blackboard.
Return Method   Not Returned
Feedback Provided   Online

Assessment 3 - Assignment 3 - Interface Presentation

Assessment Type   Presentation
Purpose   The purpose of presentation is to develop oral communication skills and the ability to record data, synthesize an opinion and convey this clearly in a well presented and articulate manner.
Description   Group presentation of final system and user interface.
Weighting   10%
Due Date   Week 12
Submission Method   In Class
Assessment Criteria   See assessment specification and marking form on Blackboard.
Return Method   Not Returned
Feedback Provided   Online

Assessment 4 - Assignment 4 - Research awareness

Assessment Type	Written Assignment
Purpose	As part of your studies in SENG2260/SENG6260 Human-Computer Interaction you are expected to undertake a series of research awareness exercises. These exercises are designed to increase your awareness of the diversity of theory and research methodology in usability and HCI.
Description	Online or live research participation and/or research reading reviews.
Weighting	10%
Due Date	Weeks 3-13
Submission Method	Ongoing Assessment
Assessment Criteria	See assessment specification and marking form on Blackboard.
Return Method	Not Returned
Feedback Provided	Online

Assessment 5 - Formal Examination

Assessment Type	Formal Examination
Purpose	The final formal examination is designed to test the individual student's knowledge of the course material and their ability to describe, analyse and synthesis problem solutions from this material.
Description	Formal exam.
Weighting	40%
Compulsory Requirements	Minimum Grade / Mark Requirement - Students must obtain a specified minimum grade / mark in this assessment item to pass the course.
Length	2 hours
Due Date	Exam period
Submission Method	Formal Exam
Return Method	Not Returned
Feedback Provided	No Feedback
Opportunity to Reattempt	Students WILL be given the opportunity to reattempt this assessment. Refer to course outline for details

ADDITIONAL INFORMATION

Grading Scheme

This course is graded as follows:

Range of Marks	Grade	Description
85-100	High Distinction (HD)	Outstanding standard indicating comprehensive knowledge and understanding of the relevant materials; demonstration of an outstanding level of academic achievement; mastery of skills*; and achievement of all assessment objectives.
75-84	Distinction (D)	Excellent standard indicating a very high level of knowledge and understanding of the relevant materials; demonstration of a very high level of academic ability; sound development of skills*; and achievement of all assessment objectives.
65-74	Credit (C)	Good standard indicating a high level of knowledge and understanding of the relevant materials; demonstration of a high level of academic achievement; reasonable development of skills*; and achievement of all learning outcomes.
50-64	Pass (P)	Satisfactory standard indicating an adequate knowledge and understanding of the relevant materials; demonstration of an adequate level of academic achievement; satisfactory development of skills*; and achievement of all learning outcomes.
0-49	Fail (FF)	Failure to satisfactorily achieve learning outcomes. If all compulsory course components are not completed the mark will be zero. A fail grade may also be awarded following disciplinary action.

*Skills are those identified for the purposes of assessment task(s).

Communication Methods	Communication methods used in this course include: - Blackboard Course Site: Students will receive communications via the posting of content or announcements on the Blackboard course site.
Course Evaluation	Each year feedback is sought from students and other stakeholders about the courses offered in the University for the purposes of identifying areas of excellence and potential improvement.
Academic Misconduct	All students are required to meet the academic integrity standards of the University. These standards reinforce the importance of integrity and honesty in an academic environment. Academic Integrity policies apply to all students of the University in all modes of study and in all locations. For the Student Academic Integrity Policy, refer to https://policies.newcastle.edu.au/document/view-current.php?id=35.
Adverse Circumstances	You are entitled to apply for special consideration because adverse circumstances have had an impact on your performance in an assessment item. This includes applying for an extension of time to complete an assessment item. Prior to applying you must refer to the Adverse Circumstances Affecting Assessment Items Procedure, available at https://policies.newcastle.edu.au/document/view-current.php?id=236. All applications for Adverse Circumstances must be lodged via the online Adverse Circumstances system, along with supporting documentation.
Important Policy Information	The 'HELP for Students' tab in UoNline contains important information that all students should be familiar with, including various systems, policies and procedures.
Other Information	**Group Work:** Groups are expected to meet regularly and keep minutes of all meetings. Selections of minutes will be for submission as part of the project reports. In addition, all groups must invite the course coordinator or lecturer to at least ONE meeting. We recognize in group work that sometimes not everyone contributes equally to the group tasks. Thus, although groups receive a single mark for their submission, we reserve the right to vary individuals' marks based on peer feedback from other group members and feedback received from course staff. The best advice is to establish a dialogue between all team members and do not let a situation with great work unbalances to occur. More details will be provided online in Blackboard.

GRADUATE PROFILE STATEMENTS

This course builds students' capacity in the following University of Newcastle Bachelor of Engineering Graduate Profile Statements (based on Engineers Australia Stage 1 Competency Standards for Professional Engineers - Graduate Attributes):

	University of Newcastle Bachelor of Engineering Graduate Profile Statements	Taught	Practised	Assessed	Level of capability
	Knowledge Base				
1	1.1. Comprehensive, theory based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the engineering discipline.				
2	1.2. Conceptual understanding of the, mathematics, numerical analysis, statistics, and computer and information sciences which underpin the engineering discipline.				
3	1.3. In-depth understanding of specialist bodies of knowledge within the engineering discipline.	☑	☑	☑	3
4	1.4. Discernment of knowledge development and research directions within the engineering discipline.				
5	1.5. Knowledge of contextual factors impacting the engineering discipline.	☑	☑	☑	2
6	1.6. Understanding of the scope, principles, norms, accountabilities and bounds of contemporary engineering practice in the specific discipline.				
	Engineering Ability				
7	2.1. Application of established engineering methods to complex engineering problem solving.				
8	2.2. Fluent application of engineering techniques, tools and resources.	☑	☑	☑	2
9	2.3. Application of systematic engineering synthesis and design processes.				
10	2.4. Application of systematic approaches to the conduct and management of engineering projects.				
	Professional Attributes				
11	3.1. Ethical conduct and professional accountability	☑	☑	☑	2
12	3.2. Effective oral and written communication in professional and lay domains.	☑	☑	☑	3
13	3.3. Creative, innovative and pro-active demeanour.				
14	3.4. Professional use and management of information.	☑	☑	☑	3
15	3.5. Orderly management of self, and professional conduct.				
16	3.6. Effective team membership and team leadership.	☑	☑	☑	2

	University of Newcastle Computer Science Graduate Profile Statements	Taught	Practised	Assessed	Level of Capability
1	Knowledge of basic science and computer science fundamentals.				
2	In depth technical competence in the discipline of computer science				
3	An ability to carry out problem analysis, requirements capture, problem formulation and integrated software development for the solution of a problem.	☑	☑	☑	3
4	Capacity to continue developing relevant knowledge, skills and expertise in computer science throughout their careers.				
5	An ability to communicate effectively with other Computer Scientists, Software Engineers, other professional disciplines, managers and the community generally.	☑	☑	☑	2
6	Ability to undertake and co-ordinate large computer science projects and to identify problems, their formulation and solution.	☑	☑	☑	2
7	Ability to function effectively as an individual, a team member in multidisciplinary and multicultural teams and as leader/manager with capacity to assist and encourage those under their direction.	☑	☑	☑	2
8	Understanding of social, cultural, global and business opportunities of the professional computer scientist; understanding the need for and principles of sustainability and adaptability	☑	☑	☑	3
9	Understanding of professional and ethical responsibilities and a commitment to them.	☑	☑	☑	2
10	Understanding of entrepreneurship; need of and process of innovation, as well as the need of and capacity for lifelong learning.	☑	☑	☑	2

	University of Newcastle Information Technology Graduate Profile Statements	Taught	Practised	Assessed	Level of Capability
1	Demonstrate a comprehensive understanding of the discipline of information technologies with an emphasis on net-centric applications, information management, and user requirements for ethical professional practice.	☑	☑	☑	2
2	Apply critical reasoning and systems thinking to understand and support the operation and constraints of contemporary enterprises and their dynamic environment.	☑	☑	☑	2
3	Work independently and collaboratively to locate, manage and organise information and resources and apply evidence-based methodologies to create, modify and maintain designs and design solutions.	☑	☑	☑	2
4	Use creativity, problem solving skills, project management skills and technical expertise to analyse, interpret, evaluate and generate solutions to complex technical and organisational problems.	☑	☑	☑	2
5	Demonstrate professional judgement and responsibility by communicating information technology principles, practices, standards to specialist and non-specialist audience clearly and persuasively.	☑	☑	☑	2