SUBJECT OUTLINE

42017 Fundamentals of Interaction Design

Course area   UTS: Information Technology

Delivery   Spring 2019; City

Credit points 6cp

Result type Grade and marks

Recommended studies: Knowledge of object-oriented programming and basic web technologies and programming is useful.

Subject coordinator
Dr. Wade Marynowsky

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Teaching staff
Lecturers:

Wade Marynowsky PhD, Wade.Marynowsky@uts.edu.au

Tutor:

Wade Marynowsky PhD, Wade.Marynowsky@uts.edu.au

Questions regarding assessment or content within the subject are welcome in lectures or tutorials or alternatively post them to the discussion board in UTSOnline. This helps ensure that all students get the benefit of the answers given.

The Subject Coordinator may be contacted by email if you have matters of a personal nature to discuss, e.g., illness, study problems, and for issues to do with extensions, group problems or other matters of importance.

All emails sent to subject coordinators, tutors or lecturers must have a clear subject line that states the subject number followed by the subject of the email [e.g. Subject 31260, Request for Extension], and must be sent from your UTS email address.

Consultation hours: Check the UTSOnline Contact section for details on consultation hours. Requests for appointments outside the given consultation hours may be arranged where circumstances require, and to do so please contact the subject coordinator by email.

Subject description
This subject focuses on the design, evaluation and implementation of interactive computing systems for human use within actual situations. Students gain an understanding of human–computer interaction (HCI) and interaction design principles, including the main concepts, tools and techniques available to build human-centred systems. The subject considers the effects on use of the different metaphors for human activity that designers use in their systems and how human-centred design and evaluation methods can improve the usability of computer systems.

Subject learning objectives (SLOs)

Upon successful completion of this subject students should be able to:

1. Critique, analyse and evaluate the usability and usefulness of information technology using well developed perceptive and analytic skills.

2. Design and evaluate usable and useful digital systems by applying Human-Centred Design skills.

3. Discuss what Interaction Design, Human-Computer Interaction and Design thinking are.

4. Describe the crucial processes within a Human-Centred technology design approach.

5. Identify and exploit the constraints and resources that human activities bring to technology design and use.

6. Recognise the range of approaches, techniques, tools, and methods available to them when designing useful and usable technology.

Course intended learning outcomes (CILOs)

This subject also contributes specifically to the development of the following Course Intended Learning Outcomes (CILOs):

- Identify, interpret and analyse stakeholder needs (A.1)

- Apply systems thinking to understand complex system behaviour, including interactions between components and with other systems (social, cultural, legislative, environmental, business etc.) (A.5)

- Identify and apply relevant problem-solving methodologies (B.1)

- Synthesise alternative/innovative solutions, concepts and procedures (B.3)

- Demonstrate research skills (B.6)

- Abstraction and modelling - Abstraction, modelling, simulation and visualisation inform decision-making and are underpinned by mathematics, as well as basic and discipline sciences. (C.0)

- Apply abstraction, mathematics and/or discipline fundamentals to analysis, design and operation (C.1)

- Evaluate model applicability, accuracy and limitations (C.3)

- Reflect on personal and professional experiences to engage in independent development beyond formal education for lifelong learning (D.2)

- Communicate effectively in ways appropriate to the discipline, audience and purpose (E.1)

- Appreciate ethical implications of professional practice (F.2)

Teaching and learning strategies

This subject includes workshop sessions with some lecture presentations (1.5 hours) and tutorial sessions (1.5 hours). The workshop and lecture presentations will allow students to learn the theoretical aspects of Interaction Design, while the tutorials will allow students to work individually and with a group on problems that contribute to their overall assessment. The learning activities are designed so that students are provided with continuous guidance and formative feedback in attempting and completing the assessment items. The activities are designed to iteratively build the students' skills, confidence and understanding in the subject matter, providing them with the best possible opportunity to succeed. Tutorial activities in particular are designed to foster group work that involves collaborative problem solving, group discussions, and learning to critique and receive feedback from others. Students are encouraged in the tutorials to give formative feedback to each other, but they also receive formative and formal feedback from their tutors. All feedback will be given to support the students' reflective critical thinking about the subject materials and their own work.

Students are expected to use social media, various online resources such as the UTS library and UTSOnline to access materials, such as prescribed readings, videos, guides, and research materials to prepare for class assignments and individual work. Besides providing background knowledge to the workshop sessions, some of these materials will be used as class quizzes and group discussion topics and critiques during the workshops. Accessing and reading prescribed texts, as well as completing the required set tasks before class will enable students to engage more deeply and successfully in the collaborative activities of the workshop and their weekly tutorial tasks. This subject values learning-through-doing. Aside from the individual assignments students will also be expected to collaborate with others during and outside of class on group assignments to solve a real-life problem through working together on a range of design activities.

Interaction Design is all around us in everyday life, but many of us are not aware of it. Therefore this subject contains a lot of real-world examples of interactive systems that exist currently or have been used in the past. These examples are both presented in lectures as well as part of the assignments and tutorial activities, for example, students will be required to look up and describe existing real-world examples for their journal assignments, while describing them using the theory and models provided to them in the lectures and repeated in the tutorials. These real-world examples not only help in demonstrating the application of Interaction Design knowledge in everyday life, but also indicate to students what a professional interaction designer's job could entail.

Content (topics)

1. What is Interaction Design and Human-Computer Interaction (HCI)

- Differences between the two and some history of the fields and recent developments

2. Design principles, concepts and theories of Interaction Design and HCI

3. Human-Centred Design process and Design Thinking

- Designing technologies for people (and use)
- Design in context and understanding users
- Representing users in the design process
- Understanding input, output and interactions styles
- Designing interactions
- Prototyping

4. Basic usability evaluation methods

- Heuristic evaluation
- Simple usability testing

Program

Week/Session	Dates	Description
1	22 July	**Preparation activity before Lecture 1.** • Readings from the Interaction Design textbook, Chapter 1, especially section 1.6.3 p.25-30 (Visibility, Mapping, Feedback, Constraints, Consistency, Affordance). **Lecture 1**: Introduction to the subject, Introduction to Design Principles and Introduction to Assessment 1. **Tutorial**: Clarifying subject requirements and expectations. Start working on Journal #1 on Feedback and Mapping in class. **Assessment 1**: Journal Assignment begins. **Notes:** **Homework:** Finish Entry #1 before tutorial Week 2; upload it to Turnitin and bring a hardcopy to week 2 tutorial.
2	29 July	**Lecture 2:** Further Design Principles and Usability Principles. **Tutorial:** Discussions of and feedback on Journal #1. Start working on Journal entry #2 Consistency and Constraints and Journal entry #3 Visibility and Signifier. Start thinking about technology to write about in #4. **Notes:** Journal entry #1 due in this weeks tutorial. **Homework:** • Start talking to a reasonably healthy >55 year old person for interviewing.

3	5 August	**Lecture 3**: The Interaction Design Process.

Tutorial:

- Introduction of Assessment 3: Design assignment.
- Interviewing exercises.

Notes:

Assessment 3, Design Project begins.

Homework:

- Finish Journal Entries #2 and #3.
- Upload both entries to Turnitin before the week 4 tutorial.
- Print out Journal Entries #2 and #3 and bring to week 4 tutorial.
- Record an interview for week 5.

4	12 August	**Lecture 4**: Designing technology for people: Physical, cognitive and experiential.

Tutorial:

- Peer marking of journal entries #2 and #3.
- Discuss entry #4.
- Discuss interview.

Notes:

Homework:

- Finish Journal Entry #4 and upload it to Turnitin before Week 5 tutorial.
- Complete 2-page Summary of your conducted interview, complemented with provided audio interview. Bullet point form in relation to the themes of Health, Participation, Security.

5	19 August	**Lecture 5** Representing users in the design process.

Tutorial:

- Create groups.
- Share individual interview data with others in the group (bring your interview data to class).
- Conduct Affinity Diagramming.
- Creating Personas and Scenarios.

Notes:

Submit Journal entry #4 to Turnitin prior to your scheduled tutorial

Homework:

- Start your Persona - bring a draft next week if you want feedback before it's due in week 7.
- Meet with your group and work out your problem area/s and 2 design ideas. Prepare 4 slides to pitch in next week's tutorial.
- Complete group charter and email it to your tutor.

| 6 | 26 August | **Lecture 6**: Designing Input, Output and Interaction Styles/Interaction Gestalt. |

Tutorial: Pitching design idea in class.

Notes:

Homework:

- Meet as a group to further develop idea based on feedback from tutor during the pitch.
- Persona due next week, submit to Turnitin before your Week 7 Tutorial, 1 persona per student.
- Print out your persona and bring to Week 7 Tutorial.

| 7 | 2 September | **Lecture 7:** Interface Design- paper prototyping |

Tutorial:

- Hand in Persona.
- Creating paper prototypes for a test scenario. Bring scissors and glue.
- Usability Report practice.

Notes:

Make an appointment with your tutor to finalise your design idea and to determine the User Interface for prototyping.

Homework:

Meet as a group to finalise your final design problem statement and conceptual idea.

| StuVac | 9 September | **StuVac** |

No lecture. No tutorials.

Consulations with your tutor.

Group meetings.

| 8 | 16 September | **Lecture 8**: Storyboarding/Prototyping. |

Tutorial: Conducting usability evaluation of your paper prototype.

Notes:

Homework:

Start your own Paper Prototype. This will be your interpretation of how the interface should look for the group agreed user goal. Think about what screens you must design for your user to accomplish the user goal. A minimum 10 screens in sequence.

| 9 | 23 September | **Lecture 9**: Prototyping and User Evaluation, briefing on Informal Examination. |
| | | **Tutorial**: Digital prototyping. |

- Refining and evaluating your paper prototype.
- Turning your paper prototype into a hybrid (higher-fidelity) mockup.
- Working on your problem scenario / future use scenario / storyboard / user goal (as a group).

Notes:

Homework:

- Continue working on your Paper Prototype and Usability Report due week 10.
- Compile and revise lecture notes for Assessment task 2: Examination (real world technology evaluation).

| 10 | 30 September | No lecture. |

Assessment task 2: Examination (real world technology evaluation).

Check your allocated timetable.

Notes:

Submit Paper Prototype and Usability Report before midnight Friday 4th October.

| 11 | 7 October | **Lecture**: Future directions. |
| | | **Tutorial**: |

- Usability evaluation of your team's digital prototype.
- Consulting with your tutor and working with your team to finalize your design-in-action video.
- Storyboarding, scripting, allocating roles.

Notes:

Homework:

- Complete your hi-fi mockup and video storyboard.
- Finishing your design-in-action video as a team.
- Submit your Design-in-Action video, no later than 1 hour before your next tutorial week 12.
- Submit your Peer assessment feedback, before your next tutorial week 12.

| 12 | 14 October | **No lecture**. |

Tutorial: Presenting your design-in-action video in class as a group.

Assessment
Feedback and formative assessment

Marked assignments are typically returned during tutorials within two weeks after the submission date (not counting StuVac). Your tutor will also provide you with ongoing feedback regarding your progress during the tutorial.

Furthermore, the required tasks that you need to complete in all your assignments are first introduced during the tutorial. This gives you the opportunity to cooperate and collaborate with your peers to learn the necessary tasks under the guidance and supervision of your tutor.

Tutorials

Tutorials are designed with activities to support and guide you through the necessary steps to produce good work, especially for Assignments 1 and 2.

Group work

Group work forms a significant part of the assessment for this subject, as its focus is on designing and building a product iteratively together as a team. For the group assignments, students will be assessed as a team, which means that each team member will normally receive the same mark. If you have trouble with the functioning of your group, ask your tutor or subject coordinator for advice as soon as possible. Do not wait until the end of the assignment. If a member of the group feels that another member is not contributing, the tutor should be informed and a group meeting be held to produce a solution. **No complaints** about group operation will be considered **after** the assignment has been handed in.

Submission

Assignments are to be submitted to Turnitin on the due date or as stipulated in the assignment guidelines.

Assessment task 1: Journal Assignment

Intent:	To develop students' sensitivities and perceptions about how people use technology in their everyday activities and the ability to articulate various issues around the design and use of technology from the perspective of its usability and usefulness.
Objective(s):	This assessment task addresses the following subject learning objectives (SLOs):
	1 and 3
	This assessment task contributes to the development of the following course intended learning outcomes (CILOs):
	A.1, B.6, C.1, C.3 and E.1
Type:	Journal
Groupwork:	Individual
Weight:	20%
Task:	Students will work individually to keep four journal entries describing and critiquing real-world digital systems in terms of their design and use, that are relevant to the interests of the subject. While students are provided with the actual digital systems they have to write about for entries #1, #2, and #3, they will have to actively seek out their own example for entry #4.
	For these entries, students have to observe and document people's interactions with the systems as well as apply their understanding of various design/usability concepts, theories and principles to analyse and critique the experience people have during these interactions. These may include poorly designed systems that do not support the activity they are used for, as well as systems that work well within their situation of use. Ongoing and formative feedback of journal entries #1, #2, and #3 will support students to produce good work. A more detailed assessment brief for each journal entry will be provided on UTSOnline.
	All journal entries will need to be uploaded to Turnitin just prior to the student's scheduled tutorial. In addition, students are required to bring a printed copy of entries #1, #2, and #3 to their scheduled tutorials on the following weeks. Students don't need to print a copy of entry #4. Entry #4 must be uploaded to Turnitin prior to the student's scheduled tutorial on week 5.

Length:	Entries #1, #2, and #3 is a single page journal entry. Entries #1. #2, and #3 will be discussed and assessed during tutorials in weeks 2 and 4. This will provide students with formative feedback so that students can complete a good journal entry #4. Entry 4 will be between 3-4 pages. Entry 4 will be assessed by the tutor.			
Due:	All deliverables must be submitted to Turnitin prior to the student's scheduled tutorial time on the weeks indicated. Week 2: entry #1, Week 4: entries #2 and #3, Week 5: entry #4			

Criteria linkages:	Criteria	Weight (%)	SLOs	CILOs
	Thoroughness of description of technology use, including representativeness of illustration	50	3	B.6, E.1
	Depth and quality of critique using appropriate interaction design vocabulary	50	1	A.1, C.1, C.3

SLOs: subject learning objectives
CILOs: course intended learning outcomes

Assessment task 2: Examination (real world technology evaluation)

Intent: To evaluate students' understandings of design principles and usability principles through their ability to apply them in the critique and evaluation of technology during use in a live setting.

Objective(s): This assessment task addresses the following subject learning objectives (SLOs):

1, 2, 3, 4, 5 and 6

This assessment task contributes to the development of the following course intended learning outcomes (CILOs):

A.1, A.5, B.1, B.3, C.0 and D.2

Type: Examination

Groupwork: Individual

Weight: 35%

Task: In this informal examination, students will work individually to critique and evaluate technology during use. The critique will identify usability problems, suggest changes that need to be made and offer other design solutions. Any books, lecture and other materials can be used in the examination.

Due: The exam is 90 mins long and will be scheduled around your usual tutorial time in Week 10. The exam timetable and allocation will be published in Week 1 or 2, so please check that you are available.

Criteria linkages:	Criteria	Weight (%)	SLOs	CILOs
	Depth of understanding of design principles and usability	20	1, 2	A.1, C.0
	Application of prior learning and use resources independently to solve problems in a limited time frame	20	4	D.2
	Appropriateness and quality of theory application	20	1, 3	B.1, C.0

Innovative application of theory	20	5, 6	B.1, B.3
Appropriate and precise use of interaction design vocabulary	20	3, 5	A.5, C.0

SLOs: subject learning objectives
CILOs: course intended learning outcomes

Further information: Students will be provided with all necessary information about this assessment during class time in Week 8.

Assessment task 3: Design Project

Intent: To provide students with opportunities to practice a Human-Centred Design methodology to solve a real-world problem. To do this, they will undertake a range of activtiies that include literature research, user research, design and evaluation activities including theory, exploratory and experimental studies, prototyping, user research and evaluation.

Objective(s): This assessment task addresses the following subject learning objectives (SLOs):

1, 2, 3, 4 and 5

This assessment task contributes to the development of the following course intended learning outcomes (CILOs):

B.6, D.2, E.1 and F.2

Type: Project

Groupwork: Group, group and individually assessed

Weight: 45%

Task: For this assignment, students will develop an elegant and creative solution using Human-Centred Design methods in relation to the Interaction Design project and deliver the following:

1. A Persona (individual) 7% DUE WEEK 7 in class
2. A paper prototype and a usability evaluation report of the paper prototype (individual) 18% DUE WEEK 10 in class.
3. A design in action video of the final design solution (Group) 20% DUE WEEK 12 in class.

Due: All deliverables must be submitted to Turnitin prior to the student's scheduled tutorial time, on the weeks indicated. Week 7: A Persona (individual) 7%. Week 10: A paper prototype and a usability evaluation report of the paper prototype (individual) 18%. A design in action video of the final design solution (Group) 20%.

Criteria linkages:

Criteria	Weight (%)	SLOs	CILOs
Quality, relevance and depth of reflection	50	1, 2, 3, 4	B.6, D.2, E.1, F.2
Citation and referencing of key texts	50	1, 2, 3, 5	E.1

SLOs: subject learning objectives
CILOs: course intended learning outcomes

Moderation of marks

Where assessment items are marked by more than one marker, moderation will occur in line with UTS policy.

Assessment feedback

Marked assignments are typically returned during tutorials within two weeks after the submission date (not counting StuVac). Attending and completing weekly tutorial exercises will allow tutors to provide you with ongoing and formative feedback regarding your progress. At the end of semester, any unreturned assignments will be made available for collection at the faculty's Learning Design Centre, building 11, level 5.

Minimum requirements

In order to pass the subject, a student must achieve an overall mark of 50% or more.

Required texts

Interaction Design: Beyond Human-Computer Interaction, Rogers, Y., Preece, J. & Sharp, H., 4th edition, John Wiley & Sons Ltd, 2015.

Recommended texts

1. Norman, D. (2013) The Design of Everyday Things (revised and expanded edition). MIT Press
2. Nielsen, J (1999), Designing Web Usability. New Riders Publishing
3. Lowgren, J & Stolterman, E (2007), Thoughtful Interaction Design, MIT Press, USA
4. Don't Make Me Think, Revisited: A Common Sense Approach to Web Usability, Krug, S., New Riders, 2014.

References

Readings, videos and other digital stimuli related to the weekly topics will be provided to students prior to each class during the semester. In terms of published academic papers, they are available for download via the UTS Library website. Please check the subject page on UTSOnline for the most current list of readings.

Other resources

A great source of information and knowledge can be found at https://www.interaction-design.org/

Graduate attribute development

For a full list of the faculty's graduate attributes, refer to the FEIT Graduate Attributes webpage.

Assessment: faculty procedures and advice

Extensions

When, due to extenuating circumstances, you are unable to submit or present an assessment task on time, please contact your subject coordinator before the assessment task is due to discuss an extension. Extensions may be granted up to a maximum of 5 days (120 hours). In all cases you should have extensions confirmed in writing.

Special consideration

If you believe your performance in an assessment item or exam has been adversely affected by circumstances beyond your control, such as a serious illness, loss or bereavement, hardship, trauma, or exceptional employment demands, you may be eligible to apply for Special Consideration.

Late penalty

Work submitted late without an approved extension is subject to a late penalty of 10 per cent of the total available marks deducted per calendar day that the assessment is overdue (e.g. if an assignment is out of 40 marks, and is submitted (up to) 24 hours after the deadline without an extension, the student will have four marks deducted from their awarded mark). Work submitted after five calendar days is not accepted and a mark of zero is awarded.

For some assessment tasks a late penalty may not be appropriate – these are clearly indicated in the subject outline. Such assessments receive a mark of zero if not completed by/on the specified date. Examples include:

a. weekly online tests or laboratory work worth a small proportion of the subject mark, or
b. online quizzes where answers are released to students on completion, or
c. professional assessment tasks, where the intention is to create an authentic assessment that has an absolute submission date, or

d. take-home papers that are assessed during a defined time period, or

e. pass/fail assessment tasks.

Querying results

If students wish to query their result in an individual assessment task or the final examination, the process to follow can be found at Querying a mark or grade. The deadline is five working days from the date of release of the result.

If students wish to query their final overall result in a subject, they may request a review of final subject assessment result. The deadline is five working days from the date of release of the result.

Academic liaison officer

Academic liaison officers (ALOs) are academic staff in each faculty who assist students experiencing difficulties in their studies due to: disability and/or an ongoing health condition; carer responsibilities (e.g. being a primary carer for small children or a family member with a disability); and pregnancy.

ALOs are responsible for approving adjustments to assessment arrangements for students in these categories. Students who require adjustments due to disability and/or an ongoing health condition are requested to discuss their situation with an accessibility consultant at the Accessibility Service before speaking to the relevant ALO.

The ALO for undergraduate students is:

Brian Tucker
telephone +61 2 9514 2627

The ALO for postgraduate students is:

Dr Nham Tran
telephone +61 2 9514 4468

Statement about assessment procedures and advice

This subject outline must be read in conjunction with the Coursework Assessments policy and procedures.

Statement on copyright

Teaching materials and resources provided to you at UTS are protected by copyright. You are not permitted to re-use these for commercial purposes (including in kind benefit or gain) without permission of the copyright owner. Improper or illegal use of teaching materials may lead to prosecution for copyright infringement.

Statement on plagiarism

Plagiarism and academic integrity

At UTS, plagiarism is defined in Rule 16.2.1(4) as: 'taking and using someone else's ideas or manner of expressing them and passing them off as ... [their] own by failing to give appropriate acknowledgement of the source to seek to gain an advantage by unfair means'.

The definition infers that if a source is appropriately referenced, the student's work will meet the required academic standard. Plagiarism is a literary or an intellectual theft and is unacceptable both academically and professionally. It can take a number of forms including but not limited to:

- copying any section of text, no matter how brief, from a book, journal, article or other written source without duly acknowledging the source
- copying any map, diagram, table or figure without duly acknowledging the source
- paraphrasing or otherwise using the ideas of another author without duly acknowledging the source
- re-using sections of verbatim text without using quote marks to indicate the text was copied from the source (even if a reference is given).

Other breaches of academic integrity that constitute cheating include but are not limited to:

- submitting work that is not a student's own, copying from another student, recycling another student's work, recycling previously submitted work, and working with another student in the same cohort in a manner that exceeds the boundaries of legitimate cooperation
- purchasing an assignment from a website and submitting it as original work
- requesting or paying someone else to write original work, such as an assignment, essay or computer program, and submitting it as original work.

Students who condone plagiarism and other breaches of academic integrity by allowing their work to be copied are also subject to student misconduct Rules.

Where proven, plagiarism and other breaches of misconduct are penalised in accordance with UTS Student Rules Section 16 – Student misconduct and appeals.

Avoiding plagiarism is one of the main reasons why the Faculty of Engineering and IT is insistent on the thorough and appropriate referencing of all written work. Students may seek assistance regarding appropriate referencing through UTS: HELPS.

Work submitted electronically may be subject to similarity detection software. Student work must be submitted in a format able to be assessed by the software (e.g. doc, pdf (text files), rtf, html).

Further information about avoiding plagiarism at UTS is available.

Retention of student work

The University reserves the right to retain the original or one copy of any work executed and/or submitted by a student as part of the course including, but not limited to, drawings, models, designs, plans and specifications, essays, programs, reports and theses, for any of the purposes designated in Student Rule 3.9.2. Such retention is not to affect any copyright or other intellectual property right that may exist in the student's work. Copies of student work may be retained for a period of up to five years for course accreditation purposes. Students are advised to contact their subject coordinator if they do not consent to the University retaining a copy of their work.

Statement on UTS email account

Email from the University to a student will only be sent to the student's UTS email address. Email sent from a student to the University must be sent from the student's UTS email address. University staff will not respond to email from any other email accounts for currently enrolled students.