Subject Description Form

Subject Code	COMP 5517
Subject Title	Human Computer Interaction
Credit Value	3
Level	5
Pre-requisite / Co-requisite/ Exclusion	Basic knowledge of programming is required.
Objectives	• To provide students with a broad view of both theoretical and practical issues in human factors for design of human-computer interfaces. • To equip students with knowledge and understanding of the nature of human computer interactions, human characteristics, computer system and interface architecture. • To equip students with sound skills in design, development and evaluation of user interfaces.
Intended Learning Outcomes	Upon completion of the subject, students will be able to: a. describe the main concepts (conceptual model, metaphors and paradigms) that influence human-computer interaction b. understand how human cognition and information processing impact human computer interaction c. understand different evaluation and testing methods, both quantitative and qualitative d. apply HCI theory, principles and practices to user interface design e. analyze an interactive system using appropriate evaluation and usability testing methods
Subject Synopsis/ Indicative Syllabus	**Nature of Human Computer Interaction (HCI)** Definitions and importance of HCI; history and intellectual roots of HCI; roles various disciplines play within HCI. **Evaluation** Role of evaluation; qualitative and heuristic evaluation techniques; empirical evaluation and benchmarking **Human Characteristics** Perception and representation; models and limits of human memory; mental models; use of metaphors; social and organizational aspects; input and output devices: performance characteristics (human and system). **Formal and Conceptual models** Task analysis and predictive modeling; dialogue interaction: types and techniques; models for describing interaction processes.

<table>
<tr><td></td><td>Design guidelines and metrics
User-centered design; structural HCI design and envisioning design; standards and metrics; guidelines to support design; standards and metrics; documentation and on-line information.

Development and applications
Design rationale; participatory design and prototyping; user interface management systems; WWW application design; groupware; collaborative work and virtual environments.

Selected Topics in Advanced HCI
Potential topics include: Human-robot Interaction; Ubiquitous Computing; Speech and natural language interfaces; Tangible user interfaces</td></tr>
<tr><td>Teaching/Learning Methodology</td><td>Lectures, Tutorials and Labs

The subject material will be delivered through lectures, tutorials and labs. Lectures will provide the main body of the subject materials. Where possible, guest lectures and/or case studies will be used to give the subject material more relevancy to real-world scenarios.

Tutorials and labs will provide students with more in-depth opportunities to explore the lecture materials and practice the lecture concepts. Where possible, a hands-on, interactive approach will be used.

Projects and Assignments

Projects and assignments will provide students with in-depth opportunities to practice the lecture concepts, as well as to assess their ability to apply these concepts in practical scenarios.

Examinations and Tests

Examinations and tests will assess students on their grasp of subject material.</td></tr>
<tr><td>Assessment Methods in Alignment with Intended Learning Outcomes</td><td>Students’ performance in this subject will be assessed by using a letter-grading system in accordance with the University’s convention from grade F (failure) to A+. The relative weights of the different assessment components are as follows:

<table>
<tr><td rowspan="2">Specific assessment methods/tasks</td><td rowspan="2">% weighting</td><td colspan="5">Intended subject learning outcomes to be assessed (Please tick as appropriate)</td></tr>
<tr><td>a</td><td>b</td><td>c</td><td>d</td><td>e</td></tr>
<tr><td>1. Projects, Assignments and Tests</td><td>55</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td></tr>
<tr><td>2. Examination</td><td>45</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td></tr>
<tr><td>Total</td><td>100 %</td><td colspan="5"></td></tr>
</table>

Explanation of the appropriateness of the assessment methods in assessing the</td></tr>
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	intended learning outcomes: The assignments, tests and examinations will assess students' ability to understand and describe the concepts behind human-computer interaction, as well as various techniques and methods that are used to develop and assess user interfaces. Projects will require students to demonstrate their ability to apply the subject concepts in designing, implementing and analyzing user interfaces.	
Student Study Effort Expected	Class contact:	
	▪ Lectures, tutorials, workshops and labs	39 Hrs.
	Other student study effort:	
	▪ Assignments, Coursework, Reading, Exams	65 Hrs.
	Total student study effort	**104 Hrs.**
Reading List and References	• Dix, J. Finlay, G. Abowd, and R. Beale, Human-Computer Interaction, 3rd Edition, Prentice Hall, 2004. • D. Norman, The Design of Everyday Things, Doubleday Business, 1990 • Shneiderman, Plaisant, Cohen and Jacobs, Designing the User Interface: Strategies for Effective Human-Computer Interaction, 5th Edition, Pearson, 2009. • W.J. Smith, ISO and ANSI Ergonomic Standards for Computer Products. A Guide to Implementation and Compliance. Prentice Hall, 1996.	