



**Title :** *Human-Computer Interaction*

**Pre-requisite:** Nil

**Objectives:** Objectives of the course are:

1. To provide an understanding of the basics of human cognitive abilities and limitations
2. To introduce of theories, tools and techniques in HCI
3. To develop an understanding of the fundamental aspects of designing and evaluating interfaces and devices
4. To help students learn to apply appropriate HCI techniques to design systems that are usable by everyone

**Outcomes:** The course focuses on both theoretical issues and practical techniques in Human-Computer Interaction. The emphasis is to develop good systems designs—systems with interfaces the typical user can understand, predict, and control. The coverage includes interaction techniques using different modalities, development methodologies, evaluation techniques, and interaction with various device platforms.

**Course Code:** CSE-868

**Credit Hours:**3-0

**Course Contents with proposed contact Hours (Weekly plan):**

Week	Topic
1	Introduction and HCI Principles
2-3	Understanding the Human and PACT Analysis
4	Mental and Interaction Models
5-7	Design Process

	<ul style="list-style-type: none"><li>• Research /Need finding</li><li>• Design and Prototyping</li><li>• Evaluation</li></ul>
8-10	Interaction Devices <ul style="list-style-type: none"><li>• Input and Pointing Devices</li><li>• Multi-touch Devices</li><li>• Output and Multimodal Interaction</li></ul>
11-13	Interaction Styles <ul style="list-style-type: none"><li>• Direct Manipulation</li><li>• Interaction in 3D and fluid navigation</li><li>• Expressive Human and Command Languages</li></ul>
14	Haptic interaction – Tangible interfaces and affective computing
15	Interaction through smell and taste
16	Brain Computer Interfaces
17	Recent trends in HCI

**Details of lab work/workshop practice, if applicable:**

Nil

**Recommended reading, including textbooks, reference books with dates**

1. Ben Shneiderman, Catherine Plaisant, Maxine Cohen, Steven Jacobs, Niklas Elmqvist, Nicholas Diakopoulos, *Designing the User Interface: Strategies for Effective Human-Computer Interaction* (6<sup>th</sup> Ed.) Pearson 2017.
2. David Benyon, *Designing Interactive Systems: A comprehensive guide to HCI, UX and interaction design*, (3<sup>rd</sup> Ed.) Pearson 2014.

**Nature of Assessments**

Assessment will be carried out as per NUST statutes