**AIIQ 3123: HUMAN-COMPUTER INTERACTION**

**PURPOSE OF THE COURSE**

This course teaches students to design user interfaces based on the capabilities of computer technology and the needs of human factors. Students design a user interface for a system and implement a prototype from a list of informal requirements. The project is developed over three assignments by a design process based on current human–computer interaction principles.

**EXPECTED LEARNING OUTCOMES**

Upon completion of the course, Students will be able to:

1. Explain the capabilities of both humans and computers from the viewpoint of human information processing.
2. Describe typical human–computer interaction (HCI) models, styles, and various historic HCI paradigms.
3. Apply an interactive design process and universal design principles to designing HCI systems.
4. Describe and use HCI design principles, standards and guidelines.
5. Analyze and identify user models, user support, socio-organizational issues, and stakeholder requirements of HCI systems.
6. Discuss tasks and dialogs of relevant HCI systems based on task analysis and dialog design.
7. Analyze and discuss HCI issues in groupware, ubiquitous computing, virtual reality, multimedia, and Word Wide Web-related environments.

**COURSE CONTENT**

Foundations of Human–Computer Interaction, Human Capabilities, The Computer, The Interaction, Paradigms. The Design Process; Interaction Design Basics, HCI in the Software Process, Design Rules, Universal Design. Implementation Support, Implementation Tools. Evaluation and User Support, Evaluation, User Support, Users Models, Cognitive Models, Socioorganizational Issues and Stakeholder Requirements. Task Models and Dialogs; Analyzing Tasks, Dialog Notations and Design; Groupware, Ubiquitous Computing, Virtual and Augmented Reality, Hypertext and Multimedia; Groupware and Computer-supported Collaborative Work; Ubiquitous Computing; Virtual Reality and Augmented Reality; Hypertext, Multimedia and the World Wide Web

**MODE DELIVERY**

Lectures, tutorials, class discussions, seminars

**INSTRUCTIONAL MATERIALS/EQUIPMENT**

Computers, LCD projector, internet access

**COURSE ASSESSMENT**

Continuous Assessment Tests (CATs) = 30 marks

End Semester – Written Examination = 70 marks

**CORE READING MATERIALS**

1. Ali, S., Md, H. S., &Nor, A. I. (2014). Human computer interaction.
2. Booth, P. A. (2015). An Introduction to Human-computer Interaction.
3. Jacko, J. A. (2012). The human-computer interaction handbook: Fundamentals, evolving technologies and emerging applications. Boca Raton, Fla: CRC, Taylor & Francis.
4. Pfleger, S. (2015). Advances in human computer interaction: Human comfort and security. Berlin [u.a.: Springer.
5. Salvendy, G. (2012). Handbook of human factors and ergonomics. Hoboken: John Wiley & Sons.

**ADDITIONAL READING MATERIALS**

1. In Barrier, T. B. (2012). Human computer interaction development and management. Hershey: IRM Press.
2. In Paternò, F. (2012). Human computer interaction with mobile devices: 4th international symposium, Mobile HCI 2002, Pisa, Italy, September 18-20, 2002: proceedings. Berlin: Springer.
3. Sears, A., & Jacko, J. A. (2016). Human-computer interaction. Boca Raton, FL: CRC Press.
4. Te'eni, D., Carey, J., & Zhang, P. (2013). Human computer interaction: Developing effective organizational information systems. Hoboken: John Wiley & Sons.
5. Zaphiris, P. (2012). Human computer interaction: Concepts, methodologies, tools, and applications. Hershey: Information Science Reference.