Course Title	Human Computer Interaction
Course Code	CSC668
Course Type	Elective
Level	Master (2nd Cycle)
Year / Semester	2nd Year / 1st Semester
Teacher's Name	TBA

ECTS	10	Lectures / week	3 hours / 14 weeks	Laboratories / week	N/A

Course Purpose and Objectives	HCI is an interdisciplinary field that integrates theories and methodologies from computer science, cognitive psychology, design, and many other areas. Issues include: command languages, menus, forms, graphical user interfaces, computer supported cooperative work, information search and visualization, World Wide Web design and display design. The aim of this course is to provide the student with a basic knowledge of Human-Computer Interaction (HCI) and investigate specific issues involving HCI and user-interface design. Design methodologies for optimum Human Computer Interaction Systems and evaluation methods for HCI systems will be presented. Contemporary topics in HCI (i.e.-alternative human sensory channels for interacting with computers, GroupWare and customizable computer systems) will also be investigated. Students will work on both individual and team projects to design, implement and evaluate computer interfaces.
Learning Outcomes	Upon succesful completion of this course students should be able to: • Apply a variety of human computer interaction theoretical models. • Design a user interface from specification to completion. • Design a user manual for a substantial piece of software. • Describe non-WIMP interaction styles and their theoretical bases. • Manage communication between human factors engineers and computer scientists on user interface development projects. • Apply concepts and strategies for making design decisions. • Describe tools, techniques, and ideas for interface design. • Evaluate literature of human-computer interaction. • Explain the importance of good user interface design.

Prerequisites	CSC615	Co-requisites	None

Course Content	Introduction: What is HCI, Significance of proper HCI in computer systems. Capabilities and limitations of humans and computers – Input Output channels, information storing and information processing, reasoning. Psychology and the design of interactive systems. Models of interaction, Ergonomics, Interaction Styles, Universal Usability

	Design of HCI systems: Paradigms for Interaction Understanding and conceptualizing interaction: Cocneptual models, interface metaphors, interaction paradigms Understanding users Designing for collaboration and communica~io: Social mechanisms, Conceptual frameworks Understanding how interfaces affect users The process of interaction design Identifying needs and establishing requirements Design rules, usability engineering, Iterative design and prototyping. Models of the User/System in Design: Cognitive models, goal and task hierarchies, Linguistic models, physical and device models. Standard Formalisms, Interaction models, Status - Event Analysis. Task Analysis: Task decomposition, knowledge based analysis, Relationship based techniques. Implementation Support: Elements of windowing systems, user interface management systems. Evaluation of an interaction system: Goals of evaluation, evaluation styles, evaluating the design/implementation. Choosing an evaluation method. Help and Documentation: Requirements of User support. Approaches to user support, Intelligent help systems. The Psychology of Human Computer Interaction: Cognitive Psychology and HCI, Human Abilities, Task Analysis, Predictive Evaluation, Cognitive Models, GOMS, Contextual Methods Presentation / User Interfaces: Design of Everyday Things, Graphic Design, Prototyping, Interaction Styles Computer Supported Cooperative Work (CSCW): Online Community Participation, Remote cooperation, Cooperation with Agents. New Paradigms: Intelligent User Interfaces, Ubiquitous Computing, Tangible User Interfaces, Virtual Reality and Virtual Environments, Augmented Reality, Novel Display Surfaces. Contemporary topics in HCI: Groupware: Introduction, Meeting and Decision support systems, Shared applications, Frameworks for Groupware. Computer-mediated communication.
Teaching Methodology	Face-to-face

Bibliography	Helen Sharp, Jennifer Preece, Yvonne Rogers, INTERACTION DESIGN: BEYOND HUMAN-COMPUTER INTERACTION, John Wiley & Sons.
	Preece, J., Sharp, H. and Rogers, Y. (2015) Interaction Design, Wiley
	Shneiderman, B., Plaisant, C., Cohen, M., Jacobs, S., Elmqvist, N. and Diakopoulos, N. (2016) Designing the User Interface: Strategies for Effective Human-Computer Interaction, Pearson.
	Carroll, J. M., HCI MODELS, THEORIES AND FRAMEWORKS: TOWARD A MULTIDISCIPLINARY SCIENCE, Morgan Kaufmann.
	Benyon, D., Turner, P.,and Turner, S.DESIGNING INTERACTIVE SYSTEMS: PEOPLE, ACTIVITIES, CONTEXTS, TECHNOLOGIES. Addison-Wesley.
Assessment	Examinations 60% Assignments 30% Class Participation and Attendance 10% 100%
Language	English