"HUMAN AND COMPUTER INTERACTION" syllabus

1. **Professional code:** HCI480
2. **Professional index:** D141700, D141501
3. **Credits: 2**

№	Topic	Learning outcomes	Duration
1	**Human**	Eye, look and feel, angle, Human cognitive and sensory limits, Human memory	6
		Sound processing, Voice, Gesture, Eye movement	4
2	**Computer**	Input and output devices, Mechanics of particular devices, Speech input, sound and speech output, Computer architecture, Performance characteristics of humans and systems, Color issues, Computer graphics , Color representation, color maps, color range of device, package and interactive input	6
		3D Interaction Techniques, virtual devices, memory, Human Factors and Strategies in Designing 3D Interfaces	4
3	**Interaction principles, models and metaphors**	Principles guiding well-designed human-system interaction: Paradigms for interaction, Principles to support usability, Accounting for users with	6
		Use of abstract metaphors for describing interface behavior, Use of metaphors to support user understanding, Dialog input and output techniques and purposes, Screen layout issues	6
		Dialog interaction: types and techniques, multimedia and non-graphical dialogues, Dialog issues	6
		Dialogue independence, Interaction Design Basics, HCI in Software Process, Design Rules	4
4	**User interface**	The typical software development lifecycle (idealized vs. actual), User-centered design overview, Three pillars of design	6
		User interface design, Guidelines and criteria for designing user interfaces, Languages and software abstractions for user interfaces, coding Use cases, scenarios, Structuring the information, Information architecture, User and process flows, Other methods of conveying structure and function	4
		Attributes of speech user interfaces, Evaluating speech user interface quality Testing and evaluating interface designs	4
		What is accessible software, Examples of accessibility adaptations, What s driving software accessibility, Implications for software organizations	4
		Safety implications of human-computer interaction, effects of automation, Addressing the effects	4
Total			**64**

Learning Outcomes

Students will be able to:

1. Explain the capabilities of both human and computer from the viewpoint of human information processing;
2. Describe typical Human-Computer Interaction (HCI) models, styles, and various historic HCI paradigms;
3. Apply interactive design process and universal design principles to designing HCI systems;
4. Describe and use HCI design rules, such as design principles, standards and guidelines;
5. Design and evaluate a 3D HCI interface based on 3D interaction techniques;

Resources

1. Ganbat.TS, "Human and Computer interaction" , MUST, 2009.
2. http://www.file.mn
3. http://www.e-booksdirectory.com/details.php?ebook=2179
4. http://freee-booksdownload.blogspot.com/2008/02/free-human-computer-interaction-ebooks.html
5. http://www.zainbooks.com/books/computer-sciences/human-computer-interaction.html
6. http://www.intechopen.com/books/show/title/advances_in_human_computer_interaction
7. http://en.wikipedia.org/wiki/Human%E2%80%93computer_interaction
8. http://www.ebooktoyou.net/ebook/human-computer-interaction-pdf.php