Course Code CSG2003	Human Computer Interaction	Course Type LT	Credits 3

Course Objectives:

- Students will be able to design dialog for HCI.
- Students will be able to design and evaluate interactive technologies.
- Students will be able to analyze the images by implementing image segmentation techniques. Students will be able to apply various object recognition algorithms for object detection and recognition.
- Students will be able to understand the important areas, theoretical framework and development of HCI

Course Outcomes:

Students will be able to

- Understanding of the Basics of Human Computer Interaction
- Understanding of the design techniques for individuals and disable persons.
- Understanding of techniques and theories for construction of software system.
  Understanding of the progress and challenges of ubiquitous computing, augmented realities, virtual reality and visualization.

Student Outcomes (SO): a, b, e, l

b Explain the capabilities of both humans and computers from the viewpoint of human information processing.

c. Describe typical human–computer interaction (HCI) models and styles, as well as various historic HCI paradigms.

i. Apply an interactive design process and universal design principles to designing HCI systems.

k. Analyze and identify user models, user support, socio-organizational issues, and stakeholder requirements of HCI systems.

l. Discuss tasks and dialogs of relevant HCI systems based on task analysis and dialog design.

Unit No	Unit Content	No. of hours	SOs
1	**Basic of HCI** Definition of HCI - Evolution of HCI - Input/output Channels - Human Memory - Thinking: Reasoning and Problem Solving - Psychology and Design of Interactive System: Models to support design - Techniques for evaluation - Computer: Text Entry Devices - Pointing and Drawing - Display Devices - Devices of Virtual Reality and 3D Interaction - Physical Control - Sensors and Special Devices	09	b,c,i
2	**The Interaction** Introduction - Model of interaction - Frameworks and HCI - Interaction Style - Elements of WIMP Interface - Interactivity - Paradigm for Interaction	09	c,i
3	**HCI in the Software Process** Software Life Cycle - Usability Engineering - Iterative Design Prototype - Design Rules: Principles to support Usability - Standards - Guidelines - Golden Rules and Heuristics - HCI pattern - Universal Design: Universal Design	08	c,i

	Principles - Multimodal Interaction.		
4	**Models and Theories** Cognitive Models: Goal and Task hierarchies - Linguistic Models - Socio-Organizational issues and stake holder requirements: Organizational Issues - Capturing Requirements - Communication and collaboration models: Face to Face Communication - Conversation - Text Based Communication	**08**	**c,i,k**
5	**Ubiquitous Computing and Augmented Realties** Ubiquitous Computing and Augmented Realties: Ubiquitous Computing - Virtual Reality - Augmented Reality - Information Visualization.	**09**	**c,i,k**
6	Guest Lecture on Contemporary Topics	**2**	
	Total Hrs.:	**45**	

Mode of Teaching and Learning: Flipped Class Room, Activity Based Teaching/Learning, Digital/Computer based models, wherever possible to augment lecture for practice/tutorial and minimum 2 hours lectures by industry experts on contemporary topics

Mode of Evaluation and assessment:
The assessment and evaluation components may consist of unannounced open book examinations, quizzes, student's portfolio generation and assessment, and any other innovative assessment practices followed by faculty, in addition to the Continuous Assessment Tests and Term End Examinations.

Text Books:

1.	Dix A., Finlay J.,Abowd G. D. and Beale R. Human Computer Interaction, 3rd edition, Pearson Education, 2005.
2.	Preece J., Rogers Y.,Sharp H.,Baniyon D., Holland S. and Carey T. Human Computer Interaction,Addison-Wesley, 1994.
3.	Rangachar and Jain. "Computer Vision." Los Alamitos, Calif.: IEEE Computer Press Society, 1991.
4.	B.Shneiderman; Designing the User Interface, Addison Wesley 2000

Reference Books:

1.	Alan Dix, Janet Finlay, Gregory Abowd, Russell Beale, "Human Computer Interaction", 3rd Edition, Pearson Education, 2004.

Recommendation by the Board of Studies on	*26 June 2019*
Approval by Academic council on	*27 June 2019*
Compiled by	*Dr. Shriram R*