CSEN4091	HUMAN COMPUTER INTERACTION	L	T	P	S	J	C
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Pre-requisite	Programming through C/Python/Java						
Co-requisite	**None**						
Preferable exposure	**None**						

Course Description:

This course provides an introduction to the field of human-computer interaction (HCI).This course is an interdisciplinary field that integrates theories and methodologies from computer science, cognitive psychology, design, and many other areas. Students will work on both individual and team projects to design, implement and evaluate computer interfaces. The course is open to students from all disciplines, providing them with experience working in interdisciplinary design teams.Teams will be incrementally led through the phases of ethnographic study and requirements analysis, scenario-based design, paper prototyping, computer prototyping, and several methods of usability analysis and evaluation. This course involves exposure to current research in HCI, in order to provide students with an understanding of the range of issues to provide them with practice reading, presenting and critiquing HCI research, and to provide ideas for team projects and real time applications.

Course Educational Objectives:

- To learn the foundations of Human Computer Interaction.
- To become familiar with the design technologies for individuals and persons with disabilities.
- To be aware of software process and mobile HCI.
- To learn the guidelines for user interface.

UNIT 1 Importance of user Interface 9 hours

Definition, importance and Benefits of good design, brief history of Screen design, about interaction design: makeup of interaction design, working together as multidisciplinary team. The Human: I/O channels, Memory, Reasoning and problem solving; The Computer: Devices – Memory, processing and networks; Interaction: Models – frameworks – Ergonomics – styles – elements.

UNIT 2 Design and software process 9 hours

Interactive Design: Basics – process – scenarios – navigation – screen design, HCI in software process: Software life cycle – usability engineering – Prototyping in practice – design rationale. Design rules: principles, standards, guidelines, rules. Evaluation Techniques – Universal Design Visually pleasing composition, presentation in formation simply and meaningfully, information retrievalon web, Technological consideration in interface design.

UNIT 3 Models and Theories 9 hours

HCI Models: Cognitive models: Socio-Organizational issues and stakeholder requirements – Communication and collaboration models-Hypertext, Multimedia and WWW.

UNIT 4 HCI in the software process and mobile: 9 hours

The software lifecycle: Usability engineering, Iterative design and prototyping Design Focus: Prototyping in practice Design rationale Design rules Principles to support usability Standards Golden rules .Evaluation techniques,Goals of evaluation.

Mobile Ecosystem: Platforms, Application frameworks- Types of Mobile Applications: Widgets, Applications, Games- Mobile Information Architecture, Mobile 2.0, Mobile Design: Elements of Mobile Design, Tools. – Case Studies

UNIT 5 Web interface design 9 hours

Designing Web Interfaces- Drag & Drop, Direct Selection, Contextual Tools, Overlays, Inlays and Virtual Pages, Process Flow, Dynamaic web content and static web connect – Case Studies

TextBooks:

1. Alan Dix, Janet Finlay, Gregory Abowd, Russell Beale, —Human Computer Interaction, 3rd

Edition, Pearson Education, 2004 (UNIT I, II & III)

2. Brian Fling, —Mobile Design and Development, First Edition, O'Reilly Media Inc., 2009

(UNIT – IV)

3. Bill Scott and Theresa Neil, —Designing Web Interfaces, First Edition, O'Reilly, 2009.

(UNIT-V)

References:

1. Designing the user interface. 3rd Edition Ben Shneidermann, Pearson Education Asia.
2. Interaction Design Prece, Rogers, Sharps. Wiley Dreamtech.
3. User Interface Design, Soren Lauesen , Pearson Education.
4. Human –Computer Interaction, D. R. Olsen, Cengage Learning.
5. Human –Computer Interaction, Smith - Atakan, Cengage Learning
6. Interaction Design (10% syllabus covered)
7. https://www.coursera.org/specializations/interaction-design
8. Design principals (10% syllabus covered)
9. **1.**https://www.tutorialspoint.com/human_computer_interface/human_computer_interface_introduction.htm
10. https://www.educative.io/blog/intro-human-computer-interaction

Course Outcomes:

After successful completion of the course the student will be able to:

1. Design effective dialog for HCI in software process
2. Design effective HCI for individuals and persons and Teams with disabilities.
3. Assess the importance of user feedback for different designs
4. Explain the HCI implications for designing multimedia/ ecommerce/ e-learning Web sites.
5. Develop meaningful user interface as per the requirements

CO-PO Mapping:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2		3	3	3				3	3			3		
CO2	2	3		2	2				3	3			3		
CO3			3		2				3					3	
CO4			3	3					2				3		
CO5	3		3	3	2				3	3			2		

Note: 1 - Low Correlation 2 - Medium Correlation 3 - High Correlation

APPROVED IN:

BOS : 06-09-2021 **ACADEMIC COUNCIL: 01-04-2022**

SDG No. & Statement:

SDGs: 10

SDG Justification:

Reduced inequality

Human Computer Interaction(HCI) a multidisciplinary research area focused on interaction modalities between humans and computers. An interdisciplinary field that integrates theories and methodologies from computer science, cognitive psychology, design, and many other areas. HCI provide a quality of experience by ensuring that an interface is: useful, usable, desirable, findable, accessible, credible, and valuable.