Course Name: BI-433,HCI & Computer Graphics

Credit Hours: 2-1

Contact Hours: 2-3

Pre-requisites: None

Course Introduction:

This course is an introduction to the fields of human-computer interaction (HCI) and computer graphics. It focuses on the principles and techniques of designing, implementing, and evaluating user interfaces for computer systems. The course also explores the principles and techniques of computer graphics, including 2D and 3D graphics, rendering, animation, and visual design. Students will learn how to design and implement user interfaces that are visually appealing, easy to use, and efficient.

CLO No	Course Learning Outcomes	Bloom Taxonomy
CLO-1	Understand the principles and techniques of human-computer interaction and computer graphics	C2 (Understand)
CLO-2	Understand the process of rendering, animation, and 3D graphics	C2 (Understand)
CLO-3	Apply principles of visual design to user interfaces	C3 (Apply)
CLO-4	Evaluate and analyze user interfaces and identify areas for improvement	C4 (Analyze)

Course Plan:

#	Weekly Distribution of Course Contents
Week-1	Introduction to Human-Computer Interaction
Week-2	Basic principles and guidelines of HCI
Week-3	User-centered design and usability testing
Week-4	Designing Effective User Interfaces
Week-5	User interface design principles and guidelines
Week-6	User interface prototyping
Week-7	Prototyping through Wireframes
Week-8	Designing for accessibility and mobile devices
Week-9	Visual Design Principles for User Interfaces
Week-10	Introduction to Computer Graphics

Week-11	2D and 3D graphics and rendering
Week-12	Animation techniques, Virtual Reality, Augmented Reality
Week-13	Lighting and shading techniques
Week-14	Rendering algorithms and techniques
Week-15	Usability testing and evaluation
Week-16	User feedback and user experience metrics

Reference Materials:

1. "Designing Interfaces: Patterns for Effective Interaction Design" by Jenifer Tidwell (2nd Edition, 2011).
2. "Interaction Design: Beyond Human-Computer Interaction" by Helen Sharp, Yvonne Rogers, and Jenny Preece (5th Edition, 2019).
3. "Computer Graphics: Principles and Practice" by James D. Foley, Andries van Dam, Steven K. Feiner, and John F. Hughes (3rd Edition, 2013).