

	THOMAS ADEWUMI UNIVERSITY, OKO-IRESE
Faculty	Computing and Applied Sciences
Department	Mathematical and Computing Science
Program	Computer Science
Course Code	CSC 409
Course Title	HUMAN COMPUTER INTERFACE
Study Year	4
Credit Hours	2
Contact Hours	36
Pre-requisite	
Status	Compulsory
Semester	Second
Mode of Assessment	Lecture, Assessment and Practical
Mode of Delivery	<ul style="list-style-type: none"> • Classroom Lectures • Laboratory Practical Sessions
Continuous Assessment Examination Total	30% 70% 100%
Course Lecturer and Instructor	
Course Description	<p>HCI stands for Human-Computer Interaction, and it is a course that focuses on the study of the design, evaluation, and implementation of interactive computer systems for human use. The primary objective of HCI is to improve the usability, accessibility, and user experience of computer systems by applying theories, principles, and methods from psychology, computer science, engineering, and design.</p> <p>In an HCI course, students typically learn about the fundamental concepts of human cognition and perception, as well as the principles of human-centered design. They also study various user interface design techniques, such as prototyping, user testing, and evaluation, and learn how to use different tools and technologies to create effective and engaging interfaces.</p> <p>Additionally, an HCI course may cover topics such as user experience design, mobile computing, social computing, virtual and augmented reality, and human-robot interaction. Students may also be exposed to current research trends and industry best practices in HCI.</p> <p>Overall, an HCI course provides students with a broad range of knowledge and skills that are relevant to the design and development of interactive computer systems, and prepares them for careers in user experience design, software engineering, product management, and related fields.</p>
Course Objectives	<p>The objectives of an HCI course are:</p> <ol style="list-style-type: none"> 9. To introduce students to the fundamental concepts and theories of human-computer interaction. 10. To provide students with the skills and knowledge needed to design, evaluate, and implement interactive computer systems.

	<ol style="list-style-type: none"> 11. To teach students how to conduct user research and usability testing to ensure that computer systems are user-centered and effective. 12. To expose students to various design techniques and tools for creating engaging and effective user interfaces. 13. To help students understand the ethical and social implications of technology and the impact of interactive computer systems on society. 	
Learning Outcome	<p>The learning outcomes of an HCI course for students may include:</p> <ul style="list-style-type: none"> • Understanding the principles and theories of human-computer interaction and user-centered design. • Acquiring knowledge and skills in user research, usability testing, and evaluation techniques. • Demonstrating proficiency in various design techniques and tools for creating effective and engaging user interfaces. • Understanding the ethical and social implications of technology and the impact of interactive computer systems on society. • Developing critical thinking and problem-solving skills to design and develop interactive computer systems. • Applying theoretical concepts and principles to real-world problems in HCI. 	
Detailed course contents	Foundations of HCI, Principles of GUI, GUI toolkits; Human-centred software evaluation and development; GUI design and programming.	
Course Contents Sequencing		
Weeks	Detailed Course Outline	Allocated Time
WEEK 1	<p>Introduction to Human-Computer Interaction</p> <ul style="list-style-type: none"> • What is HCI? • History of HCI • Importance of HCI in today's world 	2 Hours
WEEK 2	<p>Theoretical Foundations of HCI</p> <ul style="list-style-type: none"> • Human cognition and perception • Memory and attention • Mental models • Task analysis • Human factors and ergonomics • Design principles 	2 Hours
WEEK 3	User Research and Usability Testing	2 Hours

	<ul style="list-style-type: none"> • User-centered design process • Qualitative and quantitative research methods • Usability testing techniques • User personas and scenarios • Heuristics evaluation 	
WEEK 4,5	<p>Designing Effective User Interfaces</p> <ul style="list-style-type: none"> • User interface design principles • Visual design and aesthetics • Interaction design • Navigation and information architecture • Prototyping and wireframing • User feedback and iteration <p>C.A Test</p>	4 Hours
WEEK 6,7	<p>Evaluation of Interactive Systems</p> <ul style="list-style-type: none"> • Evaluation methods and techniques • Usability testing • User satisfaction surveys • Analytics and data analysis • A/B testing 	4 Hours
WEEK 8	<p>Mobile Computing and Ubiquitous Computing</p> <ul style="list-style-type: none"> • Mobile interface design • Responsive design • Wearable computing • Location-based computing • Internet of Things 	2 Hours
WEEK 9	<p>Social Computing and Collaboration</p> <ul style="list-style-type: none"> • Social media design • Online communities • Collaboration tools and technologies • Crowdsourcing and collective intelligence 	2 Hours
WEEK 10	<p>Virtual and Augmented Reality</p> <ul style="list-style-type: none"> • VR/AR technologies • Immersive interface design • Gaming and entertainment applications 	2 Hours

	<ul style="list-style-type: none"> • Educational and training applications 	
WEEK 11	<p>Human-Robot Interaction</p> <ul style="list-style-type: none"> • Designing robots for human use • Robot behaviors and interaction styles • Ethics of human-robot interaction • Future directions of human-robot interaction <p>C.A Test</p>	2 Hours
WEEK 12	<p>Ethical and Social Implications of Technology</p> <ul style="list-style-type: none"> • Digital divide and accessibility • Privacy and security • Algorithmic bias and fairness • Responsible technology design and development. 	2 Hours
REVISION		
<p>READING LIST:</p> <ul style="list-style-type: none"> • The Design of Everyday Things by Don Norman • Interaction Design: Beyond Human-Computer Interaction by Jennifer Preece, Yvonne Rogers, and Helen Sharp • About Face 4: The Essentials of Interaction Design by Alan Cooper, Robert Reimann, and David Cronin • Human-Computer Interaction by Alan Dix, Janet Finlay, Gregory D. Abowd, and Russell Beale: • Designing Interfaces by Jenifer Tidwell • Interaction Design: Foundation, Frameworks, and Applications by Preece, Sharp, and Rogers: • The Elements of User Experience by Jesse James Garrett: 		