The Open University of Sri Lanka
Faculty of Engineering Technology
Department of Electrical & Computer Engineering

Study Programme	: Bachelor of Software Engineering Honours
Name of the Examination	: Final Examination
Course Code and Title	: **EEI4361 User Experience Engineering**
Academic Year	: 2023/2024
Date	: 22/01/2025
Time	: 0930 - 1230 hrs.
Duration	: **Three (3) hours**

General Instructions

- Read all instructions carefully before answering the questions.
- This paper consists of **Four (4)** questions in Two (2) pages.
- Answer **ALL** Questions. All questions carry equal marks.
- Answers for each question should commence from a new page.
- Write answers in **bullet form**.
- This is a **Closed Book Test (CBT)**.
- Answers should be in clear hand writing.
- Do not use any colour pen other than **blue/black**.
- **General Examination Guidelines of the OUSL are applicable.**

QUESTION 1

1.1) Define **Human-Computer Interaction (HCI)** and describe its primary goals.

(3 marks)

1.2) Explain the importance of **usability** within HCI.

(3 marks)

1.3) Describe the three main components of HCI:
- i) User
- ii) Technology
- iii) Interaction

(4 marks)

1.4) Discuss how HCI contributes to enhancing **user experience** in everyday interactions with technology.

(7 marks)

1.5) Explain the significance of **user-centered design** in HCI, including its process and impact on final products.

(8 marks)

QUESTION 2

2.1) Define **applied experimental psychology** and its role in understanding user behavior.

(3 marks)

2.2) What are the main **goals of human factors design** in UX engineering?

(3 marks)

2.3) Briefly describe the seven stages of interaction in **Norman's model** and their relevance to UX design.

(4 marks)

2.4) Describe the role of **Norman's Execution-Evaluation loop** in identifying and resolving interface design issues.

(7 marks)

2.5) Discuss the implications of human factors in designing for **accessibility**, providing examples of how these considerations are integrated into digital interfaces.

(8 marks)

QUESTION 3

3.1) Describe the concept of **affordance** and how it supports intuitive user interactions.

(3 marks)

3.2) Describe the difference between **mental models** and **interaction models**.

(3 marks)

3.3) Explain how **human error**, specifically **slips and mistakes**, impacts user interactions and interface design.

(4 marks)

3.4) Discuss the role of common **interaction styles** (such as WIMP, command-line, and natural language interfaces) in meeting user expectations.

(7 marks)

3.5) Describe how integrating **user feedback** in the UX design process can lead to continuous improvement of digital interfaces. Provide examples to illustrate.

(8 marks)

QUESTION 4

4.1) Describe the methods used to understand user needs in **Human-Centered Design (HCD)** and brief how each method contributes to gathering accurate user requirements.

i)	Ethnography	iii)	User Interviews
ii)	Contextual Inquiry	iv)	Surveys

(3 marks)

4.2) Explain the purpose of **Task Analysis** and **Card Sorting** in the HCD process.

(3 marks)

4.3) How do following techniques contribute to refining a design to ensure it meets user needs?

i)	Prototyping and Iteration	iii)	Focus Groups
ii)	Usability Evaluations	iv)	Heuristics Evaluation

(4 marks)

4.4) Explain the significance of using following techniques in the HCD process.

i)	Personas	iii)	Empathy Maps
ii)	Customer Journey Maps	iv)	Scenarios

(7 marks)

4.5) Briefly explain why are usability standards (Ex: ISO 9241) essential for creating inclusive, effective, and satisfying user experiences.

(8 marks)

------- END OF THE PAPER -------