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

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Study Programme	: Bachelor of Software Engineering Honours
Name of the Examination	: Final Examination
Course Code and Title	: **EEI5280 Creative Design**
Academic Year	: 2023 - 2024
Date	: 25 August 2024
Time	:13:30 -16:30 hrs
Duration	: 3 hours

General Instructions

1. Read all instructions carefully before answering the questions.
2. Answers should be written in answer book provided. Answer for each question should commence from a new page.
3. This question paper consists of **Four (4)** questions in ~~**Four**~~**(04)** pages including this cover page.
4. **Answer all questions.**
5. This is a Closed Book Test **(CBT).**
6. Answers should be in clear handwriting.
7. Do not use red colour pen.

Read the following scenario and answer questions 1 and 2 below.

Solving the Problem of Students Using Generative AI to do Their Learning Activities

Learning activities are designed to help students grasp concepts by developing essential skills such as critical thinking, analysis, and creativity. Relying on generative AI tools to complete these learning activities would have long-term effects on their learning and future professional decision-making abilities. While these AI tools can provide quick and somewhat accurate answers, they often bypass the critical thinking and problem-solving processes that are essential for deep learning. When students rely on AI to generate answers, they may not fully engage with the material, leading to a superficial understanding of key concepts.

This lack of engagement can be detrimental to their learning process. They would miss out on the opportunity to develop skills such as critical thinking, analysis, and creativity. Furthermore, when these students enter the workforce, they may struggle with decision-making, as they have become accustomed to relying on AI for answers rather than forming their own judgments. This could lead to a lack of confidence in their ability to solve complex problems, make informed decisions, and innovate in their respective fields.

Question 1

a) What are the major steps of design thinking? (5 marks)

b) In which stage of the Design Thinking process can the Six Thinking Hats technique be effectively utilized? (2 marks)

c) Briefly describe what is meant by *Black Hat, Yellow Hat*, and *Red Hat.* (6 marks)

d) Analyze the given scenario using the *Black Hat, Yellow Hat*, and *Red Hat* perspectives. (12 Marks)

Question 2

a) Why would the use of generative AI by students to complete their assignments hinder their learning process and negatively impact their decision-making skills in the workplace?

Apply the "5 Why" method to identify the actual problem. (15 Marks)

b) Identify 03 major stakeholders of the solution to the problem identified in Question 2 part (a) and the role of each stakeholder. (06 Marks)

c) Prepare an action plan that includes specific activities that teachers/lecturers should undertake to mitigate the identified problem. (04 Marks)

Question 3

Problem to solve: "How to get more OUSL Students to complete the degree in minimum time?"

a) Use "Reverse Thinking" process and write a reversed problem which will make the problem worse. (4 Marks)

b) List down 3 ideas how to solve the reversed problem. (6 Marks)

c) Once ideas are generated reverse them to find solutions to the original problem. (6 Marks)

d) Explain how you can validate that the solutions identified in Question 3(c) are viable? (3 Marks)

e) List 2 challenges that you might face in implementing each of the solutions identified in Question 3 (c)? (6 Marks)

Question 4

a) Briefly explain what is meant by 'empathy' in the design thinking process. (4 Marks)

b) What is meant by designing for sustainability? (5 Marks)

c) How can you redesign the packaging of lunch packets using polythene wraps to be more environmentally sustainable while maintaining its functionality and appeal using the SCAMPER technique? (12 Marks)

d) List 4 factors to be considered in Holistic Design. (4 Marks)