"Investing in Africa's Future"

COLLEGE OF ENGINEERING AND APPLIED SCIENCES (CEAS)

NCSE 105: INTRODUCTION TO SOFTWARE ENGINEERING

END OF SECOND SEMESTER EXAMINATIONS

APRIL/MAY 2025

LECTURER: MS ELIZABETH MAFU

TIME: 3 HOURS

INSTRUCTIONS

You are required to answer questions as instructed in each section

Start each question on a new page in your answer booklet

Answer all questions in Section A and B and any three from Section C

SECTION A

Question 1 – *mark as **true** or **false*** **[10]**

a. Software engineering umbrella activities are only applied during the initial phases of software development projects.
b. In its simplest form an external computing device may access cloud data services using a web browser.
c. Software is a product and can be manufactured using the same technologies used for other engineering artifacts
d. Teams with diversity in the individual team member skill sets tend to be more effective than teams without this diversity.
e. Project plans should not be changed once they are adopted by a team.

Question 2 – *select the letter adjacent to your answer* **[10]**

1. Software engineering primarily aims on

A. Reliable software
B. Cost effective software
C. Reliable and cost-effective software
D. None of these

2. Information hiding is to hide from user, details that

A. Are relevant to him
B. Are not relevant to him
C. May be maliciously handled by him
D. Are confidential

3. UML stand for

A. Uniform Machine Language
B. Unified Modeling Language
C. Unit Modeling Language
D. Universal Modeling Language

4. Prototyping is used to

A. Test the software as an end product
B. Expand design details
C. Refine and establish requirements gathering
D. None of these

5. Which model is the simplest model in software development?

A. Prototype model
B. Iterative model
C. Waterfall model
D. None of these

SECTION B – *answer all questions in this section*

Question 3

Briefly discuss the following statements showing whether you agree or disagree with the statement, giving relevant examples.

a. The design model should be traceable to the requirements model. **[5]**
b. Larger programming teams are always more productive than smaller teams. **[5]**
c. A successful test discovers at least one as-yet-undiscovered error. **[5]**
d. Teams using agile software practices do not generally create models. **[5]**

SECTION C – *answer any 3 questions from this section*

Question 4

List and explain the following

a. Activities of generic process framework for software engineering. **[10]**
b. Umbrella activities **[10]**

Question 5

a. What is a software myth? Explain the changing nature of the software. **[10]**
b. What is software testing? Explain unit testing in detail **[10]**

Question 6

a. List and explain distinct tasks of requirements engineering **[10]**
b. Explain the Functional and Non-Functional requirements **[10]**

Question 7

a. What is design process? Explain the characteristics of good design. **[10]**
b. What is software architecture? Why is it so important? **[10]**

Question 8

a. Explain a Gantt chart as an example of a project tracking and control tool. [**10]**
b. Differentiate between Reactive and Proactive risk strategies. **[10]**

END OF EXAMINATION