



"Investing in Africa's Future"

COLLEGE OF ENGINEERING AND APPLIED SCIENCES

SEO 1101: OBJECT ORIENTED SOFTWARE DEVELOPMENT

END OF FIRST SEMESTER EXAMINATIONS

NOVEMBER 2025

LECTURER: MR T.S. MUWANI

TIME: 3 HOURS

INSTRUCTIONS

1. Answer any **five** questions.
2. Each question carries 20 marks.
3. Start **each** question on a new page in your answer booklet
4. Credit will be awarded for logical, systematic and neat presentations

Question 1

Explain how polymorphism enhances software maintainability and reduces code coupling. [20 marks]

Question 2

Explain the Law of Demeter and how it aims to reduce coupling between classes and provide an example of code that violates this law. [20 marks]

Question 3

Discuss the practical value of Unified Modelling Language (UML) as a communication and brainstorming tool versus its role as rigorous technical documentation. [20 marks]

Question 4

You are tasked to design the control software for an elevator system. With the aid of relevant diagrams, compare and contrast the suitability of using a State Machine Diagram versus an Activity Diagram to model the elevator's behaviour. [20 marks]

Question 5

Compare and contrast the traditional Waterfall Software Development Life Cycle (SDLC) with an Agile iterative approach with the aid of relevant diagrams [20 marks]

Question 6

A developer argues that thoroughly testing one class at a time (unit testing) is enough and that integration testing is a waste of resources. Discuss. [20 marks]

Question 7

Evaluate the role of automated tools in the code review process and to what extent can these tools replace human reviewers. [20 marks]

END OF EXAMINATION