



TECHNICAL UNIVERSITY OF MOMBASA

SCHOOL OF ENGINEERING AND TECHNOLOGY
DEPARTMENT OF ARCHITECTURE & BUILT ENVIRONMENT

UNIVERSITY EXAMINATION FOR:

BACHELOR OF ARCHITECTURAL STUDIES

**EAR 4103: PHYSICAL ENVIRONMENT I (GEOLOGY AND
ECOLOGY)**

SPECIAL/SUPPLEMENTARY EXAMINATION

YEAR ONE SEMESTER ONE

SERIES: JULY 2025

TIME: 2 HOURS

DATE: JULY, 2025

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of **FIVE** questions. Attempt question ONE (Compulsory) and any other TWO questions.

Do not write on the question paper.

QUESTION ONE (30 MARKS) - COMPULSORY

- a) With the aid of sketches, distinguish between transform and convergent plate boundaries. (6 marks).
- b) Using sketches describe the formation of sedimentary rocks. (9 marks).
- c) Explain the various ways and Architect can analyse the ecology of a site. (9 marks).
- d) Explain the structure of ecosystems in relation to the built environment. (6 marks).

QUESTION TWO (20 MARKS)

- a) Explain the role of the biosphere in the process whereby weathered material is moved downslope under the immediate influence of gravity. (10 marks).
- b) Explain the influence of the earth systems in aiding the destructive processes that change the physical and chemical character of rocks. (10 marks).

QUESTION THREE (20 MARKS)

You have been tasked to analyse the Mombasa Urban Ecology with a view of redesigning the built and natural environment. Explain the approach to be taken. (20 marks).

QUESTION FOUR (20 MARKS)

With the aid of sketches explain any TWO compositional layers of the earth that have a major impact to the built environment. (20 marks).

QUESTION FIVE (20 MARKS)

The class has been tasked to design an ecological lodge in Tsavo National Park. Explain the principle that will be utilized to realize the project. (20 marks).