



TECHNICAL UNIVERSITY OF MOMBASA

Faculty of Engineering and Technology

Department of ARCHITECTURE & BUILT ENVIRONMENT

UNIVERSITY EXAMINATION FOR:

BACHELOR OF ARCHITECTURAL STUDIES/BACHELOR OF ARCHITECTURE

EAR 4407: URBAN DESIGN

SPECIAL & SUPPLEMENTARY EXAMINATION

SERIES: JULY 2025

TIME: 2 HOURS

DATE: Pick Date Jul 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 (Compulsory)

- a) State the FOUR basic principles of New Urbanism that should be used in the development of the built environment in urban areas. (4 marks)
- b) With the use of illustrations, explain the following THREE models of urban structure used in the distribution of social groups and activities in cities:
 - i. Multiple nuclei model; (3 marks)
 - ii. Urban realms model; (3 marks)
 - iii. Exploitive model; (3 marks)
- c) Explain FIVE push factors that make people migrate into urban areas. (5 marks)
- d) Explain FIVE characteristics that a sustainable town structure should have. (5 marks)
- e) Explain the following SEVEN factors that impact the permissible Floor Space Index (FSI) to ensure that urban development is balanced, sustainable and aligned with the overall planning objectives of an area:
 - i. Government Policies;
 - ii. Public Amenities;
 - iii. Environmental Considerations;
 - iv. Building Height Restrictions;
 - v. Plot Size;
 - vi. Infrastructure Capacity;
 - vii. Zoning Regulations. (7 marks)

Question TWO

- a) Identify and explain the FIVE elements of urban design that influence the physical form, aesthetics and functionality of cities and towns. (10 marks)
- b) Identify and explain FIVE key principles that define mobility-friendly circulation in urban areas. (10 marks)

Question THREE

- a) Explain the following FIVE comprehensive areas of concern that constitute some of the most challenging opportunities in sustainable urbanism.
- i. Density; (2 marks)
 - ii. Sustainable Corridors; (2 marks)
 - iii. Biophilia; (2 marks)
 - iv. High-performance buildings and infrastructure; (2 marks)
 - v. Sustainable Neighborhoods. (2 marks)
- b) State FIVE positive effects of urbanization. (5 marks)
- c) State FIVE negative effects of urbanization. (5 marks)

Question FOUR

- a) What are the expected populations as classified in the Urban and Cities Act (Kenya) for the following urban areas:
- i. City;
 - ii. Municipality
 - iii. Town
 - iv. Market Centre (4 marks)
- b) State SIX goals of urban renewal in areas that are suffering from urban decay. (6 marks)
- c) Explain the following principles of design that are an integral part of creating form and spatial definition in urban areas:
- i. Unity and Variety; (2 marks)
 - ii. Balance and Symmetry; (2 marks)
 - iii. Rhythm; (2 marks)
 - iv. Scale; (2 marks)
 - v. Proportion. (2 marks)

Question FIVE

- a) Identify and explain FIVE interventions that can be used for transforming the environment in areas suffering from urban decay. (10 marks)
- b) Identify and explain FIVE primary needs that people seek to satisfy in urban public open spaces. (10 marks)