



## TECHNICAL UNIVERSITY OF MOMBASA

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Faculty of Engineering and Technology  
Department of BUILDING & Civil engineering  
**UNIVERSITY EXAMINATION FOR:**  
BACHELOR OF SCIENCE IN CIVIL ENGINEERING

TCV 4412: CONSTRUCTION MANAGEMENT I

END OF SEMESTER EXAMINATION

**SERIES:** APRIL 2025

**TIME:** 2 HOURS

### **Instructions to Candidates**

You should have the following for this examination

*-Exam 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) 20 Marks**

- Define construction management. (2 Marks)
- List any FOUR key responsibilities of a construction manager on a typical civil engineering project. (4 Marks)
- List and briefly explain four different types of construction contracts, including one advantage of each. (8 Marks)
- Compare and contrast public and private clients in terms of objectives, procurement style, and project focus. (6 marks)

### **ANSWER ANY TWO QUESTIONS**

- Name three types of players in the Kenyan construction industry and briefly state one key function of each (3 marks)
- Outline four characteristics of the construction industry that make its management unique compared to other industries. (4 marks)
- Discuss two causes of inefficiency in construction projects due to fragmentation of the industry. (2 marks)



- d) Identify three potential effects of poor coordination among consultants, contractors, and clients. (3 marks)
- e) Explain how the construction industry contributes to the following aspects of national development, using Kenyan examples: (4 marks)
  - i. Infrastructure
  - ii. Employment
  - iii. Investment
  - iv. Technology transfer
- f) You are part of a consulting team supervising the construction of a rural water supply project in Teso. The client is frustrated with delays, the community is uncooperative, and the contractor is behind schedule.
  - i. Identify two key challenges in this scenario that are common in the Kenyan construction industry. (2 marks)
  - ii. Propose two practical strategies the team can use to improve project delivery and community involvement. (2 marks)

### **QUESTION THREE (20 Marks)**

- a) Define the following terms as used in construction management: (3 marks)
  - i. Management
  - ii. Organization
  - iii. Formal organization
- b) Briefly explain three principles of management and how each applies on a construction site. (6 marks)
- c) Discuss three principles of organization and their importance in managing a construction site team. (6 Marks)
- d) You are a site engineer overseeing the construction of a five-storey commercial building in Eldoret. The site has masons, electricians, plumbers, and carpenters. However, coordination is poor and some workers are receiving conflicting instructions.
  - i. Identify three principles of management or organization being violated. (3 marks)
  - ii. Propose two strategies you would implement to improve team coordination and task clarity. (2 marks)

### **QUESTION FOUR (20 Marks)**

- a) List any three common types of organizational structures used in construction firms and give one advantage of each. (3 marks)

- b) Explain the term "span of control" and describe any three factors that influence the optimal span of control on a construction site. *(4 marks)*
- c) Define autocratic and democratic leadership styles. *(2 marks)*
- d) Discuss three project situations where autocratic and democratic leadership styles would be effective on a Kenyan construction site. *(3 marks)*
- e) Using Maslow's Hierarchy of Needs, explain how a construction company can motivate its workers at each of the following levels: *(4 marks)*
  - i. Physiological needs
  - ii. Safety needs
  - iii. Esteem needs
  - iv. Self-actualization
- f) You are the site manager for a multi-storey office block project. You've observed frequent conflicts between skilled and unskilled labourers, missed deadlines, and several safety violations.
  - i. Identify two key site personnel organization principles that may be lacking. *(2 marks)*
  - ii. Suggest two practical actions you would take to improve teamwork and safety compliance. *(2 marks)*

#### **QUESTION FIVE (20 Marks)**

- a) List three key benefits of effective contract planning in construction project management. *(3 mark)*
- b) Explain four activities carried out during the planning stage of contract planning. Give a relevant construction example for each. *(4 mark)*
- c) Explain how contingency is calculated and its role in project cost control. *(2 marks)*
- d) Compare and contrast Bar Charts, Network Diagrams, and Milestone Charts in construction scheduling. In your answer, highlight one advantage and one limitation of each. *(6 marks)*
- e) You are the site engineer for a highway project in Kenya. Heavy rains, delayed material deliveries, and sudden design changes have disrupted your schedule.
  - i. Identify three planning challenges reflected in this situation. *(3 marks)*
  - ii. Propose two practical strategies to improve the project's performance moving forward. *(2 marks)*