



TECHNICAL UNIVERSITY OF MOMBASA  
**Faculty of Engineering &  
Technology**

DEPARTMENT OF BUILDING & CIVIL ENGINEERING  
**DIPLOMA IN BUILDING & CIVIL ENGINEERING (DBCE 13M)**  
EBC 2103: ENGINEERING DRAWING & COMPUTER AIDED DESIGN

**END OF SEMESTER EXAMINATION**  
SERIES: DECEMBER 2013  
**TIME ALLOWED: 2 HOURS**

**Instructions to Candidates:**

You should have the following for this examination

- *Answer Booklet*

This paper consists of **FIVE** questions. Answer any **THREE** questions

Maximum marks for each part of a question are as shown  
This paper consists of **THREE** printed pages

### Question One

- a) Briefly discuss the advantages of using Computers Aided Design in engineering: **(10 marks)**
- b) (i) Explain the use of the following Computer Aided Design window components:  
- Model space  
- Command line  
- Menu bars **(6 marks)**
- (ii) Explain the TWO coordinate systems used in CAD applications **(4 marks)**

### Question Two

- a) Using CAD plot the boundaries of a plot of land having the following information:

Boundary	Bearing			Distances in Metres
	°	'	“	
AB	18	30	55	105.00
BC	350	05	15	66.00
CD	65	40	04	129.00
DE	97	00	09	250.00
FG	179	59	59	75.90
GH	255	09	58	303.60

**(16 marks)**

- b) The bearing and distance of boundary HA have not been provided; close the traverse and provide the missing information. **(4 marks)**

### Question Three

A Constituent Development Fund Committee wants to construct an office. Using the following information design and draw a suitable floor plan for the committee.

#### Two Roomed Office Block

Secretary's office room

Floor area not exceeding 21m<sup>2</sup>

Width of room not less than 5.4m

Chairman's office room

Floor area not exceeding 19m<sup>2</sup>

Width of room not less than 5.4m

**(20 marks)**

### Question Four

The office block proposed in question 3 above is to be constructed in a firm soil. Draw and detail:

- a) Suitable foundation type and
- b) Floor

**(20 marks)**

**Question Five**

The office block proposed in question 3, above is to be provided with a timber pitched roof; and covered with C.G.I sheets. Draw and detail:

- (i) Closed eaves to the roof and a
- (ii) Soft board ceiling

**(20 marks)**