



**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY**  
**SCHOOL OF SPATIAL PLANNING**  
**UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF SPATIAL**  
**PLANNING AND DESIGN**  
**SEMESTER 2022/2023 ACADEMIC YEAR**

**CENTRE: MAIN CAMPUS**

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**COURSE CODE: PPB1307**

**COURSE TITLE: COMPUTER AIDED DESIGN**

**EXAM VENUE:**

**STREAM: SPATIAL PLANNING**

**DATE:**

**EXAM SESSION:**

**TIME: 2 HOURS**

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**Instructions:**

- 1. Answer question 1 ( compulsory ) and ANY other 2 questions.**
- 2. Candidates are advised not to write on the question paper.**
- 3. Candidates must hand in their answer booklets to the invigilator while in the examination room.**

### QUESTION ONE: 30 Marks

- a. Explain the meaning of the following terms (5mks)
  - i. Computer-Aided Design
  - ii. Geometric Modelling
  - iii. Tweaking
  - iv. Lofting
  - v. Sweeping
- b. Discuss the role of a Computer as a participant in a design team (10mks)
- c. Using Examples, explain the role of Computer-Aided Design in Spatial Planning (10mks)
- d. Explain the use of the following keyboard shortcuts in undertaking a Computer-Aided Design exercise. (5mks)
  - i. Cntrl + shift + G
  - ii. Cntrl + shift + M
  - iii. Cntrl + shift + S
  - iv. Ctrl + N
  - v. Ctrl + A

### QUESTION TWO: 20 Marks

- a. Using Illustrations, discuss the following types of 3D Modelling in Computer-Aided Design (15mks)
  - i. Wireframe Modelling
  - ii. Surface Modelling
  - iii. Solid Modelling
- b. Explain any FIVE guidelines for geometric modeling (5mks)

### QUESTION THREE: 20 Marks

- a. Explain the meaning and application of the following tools in Computer-Aided Design
  - i. Extrusion (1mk)
  - ii. Dimension (1mk)
  - iii. Fillet (1mk)
  - iv. Explode (1mk)
  - v. Trim (1mk)
  - vi. Snap (1mk)
  - vii. Tweening (1mk)
  - viii. Grid (1mk)
  - ix. Offset (1mk)
  - x. Scale (1mk)
- b. Discuss any TEN advantages of CAD over manual drawing (10mks)

### QUESTION FOUR: 20 Marks

- a. Using an illustration, discuss the various elements of an ArchiCAD platform (10mks)

- b. There is a large variety of different CAD packages available on the market these days and the design manager is faced with the enormous problem of selecting a package to suit the demands of the company and its product range. Discuss, the CAD software selection criteria. (10mks)

**QUESTION FIVE: 20 Marks**

Using Illustrations, discuss the process/procedure of undertaking the following tasks Computer-Aided Design Process using ArchiCAD.

- i. Setting up the drawing template (5mks)
- ii. Adding project information (5mks)
- iii. Setting the Working Units (5mks)
- iv. Setting up story levels (5mks)