REPUBLIC OF KENYA

COMPETENCY-BASED CURRICULUM

FOR

ELECTRICAL INSTALLATION

KNQF LEVEL 4

ISCED PROGRAMME CODE:07130454B

TVET CDACC
P.O BOX 15745-00100
NAIROBI

ENGINEERING MATHEMATICS

UNIT CODE: ENG/CU/EI/CC/01/4/B

Relationship to Occupational Standards

This unit addresses the unit of competency: Apply engineering mathematics

Duration of Unit: 30 hours

Unit Description

This unit describes the competencies required to apply engineering mathematics. Applying aalgebra, coordinate geometryy, carrying out mensuration, applying matrix and vector vector.

Summary of Learning Outcomes

1. Apply Algebra
2. Apply Coordinate Geometry
3. Carry out Mensuration
4. Apply Matrix
5. Apply Vectors

Learning Outcomes, Content and Suggested Assessment Methods

Building Technology Curriculum		
Learning Outcome	**Content**	**Suggested Assessment Methods**
1. Apply Algebra	• Base and Index • Law of indices • Laws of logarithm • Conversion of bases • Use of calculator • Algebraic expressions and equations • Reduction of algebraic equations • Solutions of simultaneous linear equations in two unknowns • Solution of quadratic equation	• Written tests • Oral questioning • Assignments • Supervised exercises

2. Apply Coordinate Geometry	• Polar equations • Cartesian equation • Graphs of polar equations • Normal and tangents	• Written tests • Oral questioning • Assignments • Supervised exercises
3. Carry out Mensuration	• Units of measurements • Perimeter and areas of regular figures • Volume of regular solids • Surface area of regular solids • Area and volume of irregular figures • Areas and volumes using Pappus theorem	• Written tests • Oral questioning • Assignments • Supervised exercises
4. Apply Matrix	• Matrix operation • Determinant of 2x2 matrix • Inverse of 2x2 matrix • Solution of linear simultaneous equations in 2 unknowns • Application of matrices	• Assignments • Oral questioning • Supervised exercises • Written tests
5. Apply Vector	• Vectors and scalar in two dimensions • Operations on vectors: Addition and Subtraction	• Assignments • Oral questioning • Supervised exercises • Written tests

Suggested Methods of Instructions

- Group discussions
- Demonstration by trainer
- Exercises by trainee

Recommended Resources

- Scientific Calculators
- Rulers, pencils, erasers
- Charts with presentations of data
- Graph books
- Dice
- Computers with internet connection