

# ENGINEERING MATHEMATICS

**UNIT CODE: ENG/CU/AME/CC/02/4**

## **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 by an individual in order to apply a wide range of engineering mathematics in their work. It includes using concepts of basic arithmetic in solving work problems. It also involves using formulae and algebraic expressions for solving work problems and applying geometrical calculations for solving work problems. It also involves applying statistics to solve work problems

## **Summary of Learning Outcomes**

1. Use concepts of basic arithmetic in solving work problems
2. Use formulae and algebraic expressions for solving work problems
3. Apply geometrical calculations for solving work problems
4. Apply statistics to solve work problems

## **Learning Outcomes, Content and Suggested Assessment Methods**

<b>Learning Outcome</b>	<b>Content</b>	<b>Suggested Assessment Methods</b>
1. Use concepts of basic arithmetic in solving work problems	<ul style="list-style-type: none"><li>• Identify various kinds of numbers</li><li>• Carry out arithmetical operations accurately</li><li>• Use indices in multiplication and division</li></ul>	<ul style="list-style-type: none"><li>• Written tests</li><li>• Oral questioning</li><li>• Assignments</li><li>• Supervised exercises</li></ul>
2. Use formulae and algebraic expressions for solving work problems	<ul style="list-style-type: none"><li>• Solve simple algebraic equations</li><li>• Form simple algebraic equations</li><li>• Represent linear equations</li></ul>	<ul style="list-style-type: none"><li>• Written tests</li><li>• Oral questioning</li><li>• Assignments</li><li>• Supervised exercises.</li></ul>

	<ul style="list-style-type: none"> <li>• Solve simple simultaneous equations</li> </ul>	
3. Apply geometrical calculations for solving work problems	<ul style="list-style-type: none"> <li>• Calculate areas of selected shapes</li> <li>• Calculate surface areas of selected shapes</li> <li>• Calculate volumes of selected shapes</li> <li>• Apply Pythagoras theorem</li> </ul>	<ul style="list-style-type: none"> <li>• Assignments</li> <li>• Oral questioning</li> <li>• Supervised exercises</li> <li>• Written tests.</li> </ul>
4. Apply statistics to solve work problems	<ul style="list-style-type: none"> <li>• Data collection</li> <li>• Data organization</li> <li>• Data representation</li> <li>• Median</li> <li>• Charts</li> <li>• Interpretation of data</li> </ul>	<ul style="list-style-type: none"> <li>• Assignments</li> <li>• Oral questioning</li> <li>• Observation</li> <li>• Supervised exercises</li> <li>• Written tests</li> </ul>

#### Suggested Delivery Methods

- Group discussions
- Demonstration by trainer
- Online videos
- Power point presentation
- Exercises by trainee

#### Recommended Resources

- Scientific Calculators
- Relevant reference materials
- Stationeries
- Internet