BASIC SCIENCE PRINCIPLES

UNIT CODE: ENG/CU/AUT/CC/3/4/A

Relationship to Occupational Standards

This unit addresses the unit of competency: **Apply Basic Science Principles**

Duration of Unit: 50 hours

Unit Description

This unit describes the competencies required in order to apply basic science principles. It involves interpreting units and measurements, resolving forces,work, energy and power, determining effect of friction in automotive, solving problems related to light and sound, general chemistry, element and compounds and distinguishing metals and alloys.

Summary of Learning Outcomes

1. Interpret units and measurements,
2. Resolve forces,work, energy and power
3. Determine effect of friction in automotive
4. Solve problems related to light and sound
5. Solve problems related to general chemistry, element and compounds
6. Distinguish metals and alloys.

Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcome	Content	Suggested Assessment Methods
1. Interpret units and measurements	• Units of measurements • Convertion of units	• Written tests • Oral questioning • Assignments • Supervised exercises
2. Resolve forces, work, energy and power	• Types of forces • Work energy and power • Energy convertion • Simple calculations of work power and energy	• Written tests • Oral questioning • Assignments • Supervised exercises.

		• Practical tests
3. Determine effect of friction in automotive	• Laws of friction • Advatages of friction • Effects of friction • Simple calculations involviving friction	• Assignments • Oral questioning • Supervised exercises • Written tests. • Practical tests
4. Solve problems related to light and sound	• Sources of lifgt • Sources of sound • Reflection and refration of light • Light images formed on plane and curved mirrors • Primary and secondary colours in light • Simple calculations involving location of light images • Propagation of sound • Properties of sound • Velocity of sound in air	• Assignments • Oral questioning • Practical tests • Observation • Supervised exercises • Written tests
5. Solve problems related to general chemistry, elements and compounds	• Definitation of matter • Classification of matter • Structure of atoms • Properties of elements and compounds • Properties of acids and bases	• Assignments • Supervised exercises • Written tests • Practical test
6. Distinguish metals and alloys	• Metals • Alloys • Uses of alloys	• Assignments • Oral questioning • Practical tests • Observation • Supervised exercises • Written tests

Suggested Methods of Instruction:

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

Recommended Resources

- Scientific Calculators
- Relevant reference materials
- Stationeries
- Automotive workshop
- Relevant practical materials
- Laboratories
- Internet