

INDUSTRIAL TECHNOLOGY

ELECTRICAL TECHNOLOGY LEVEL 7

Topic	Skills	Knowledge	Understanding	Attitude	Content	Methods/ Strategies	Evaluation	Area of Integration
General Health and Safety Requirement and Procedures	Practicing personal and general safety requirements governing workshops and work sites. Practicing electrical and electronic safety requirements governing workshops. Follow safety procedures based on rules and regulations.	Identify personal and general safety in workshop. Electrical and electronic safety regulations pertaining to safety in workshop. The safety procedures based on rules and regulations in workshop.	Safety is important in workshop and worksites. Regulations and rules governing workshops are prepared and must be adhered to. Electrical and electronic safety requirements are important and must be followed at all times.	Always be prepared to work in a workshop with safety in mind. Beware of accident hazards and the safe use of machines, tools and equipment. Careless use of equipment can cause serious accident to one self and others.	Requirements as prescribed through rules and regulations for the country in relation to workshops. List of rules, regulations, procedures for specific rules and regulations in booklets, charts, diagrams and videotapes.	Outline rules and regulations governing workshops safety. Discuss the importance of safety and the need for it at all times. Let students list safety rules and identify areas of accident hazards.	Observe the students as they prepare to enter the workshop. Prepare them with the correct outfit. Observe the regulations and rules in handling tools, materials and equipment. Let students do simple projects using tools.	Agriculture Science Home Economics Physics.

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Maintain Safety and Healthy Working Environment.	Be familiar with the environment hazards and safe disposal of water. Practice good hygiene in workstation. Plan and organize efficient use and maintenance of workstations. Correct practices at work places safety and hazards.	State/list Be aware of the environment, waste disposal hygiene procedure. The plan for maintaining healthy working environment. The correct principles and practices at work places. Be aware of hazards.	The layout and surrounds of the work place. The method of waste disposal, hazards, cleaning storing, acceptable behaviour, rules and record keeping. Carelessness and negative attitude leads to accidents and injury.	Always be aware of the working environments, cleaning schedules, waste disposals, storage of tools and materials. Show leadership qualities in the work place. Organise cleaning and storing activities. Allocate time for cleaning after work.	Types of work environment, hazards, disposal hygiene practices and requirements. Knowledge of the environment and the hazards. Inventory of resources. Preparation schedules and procedure. Storage of materials and supplies, maintenance of tools, equipment, machines, rules, regulations and specifications.	Prepare charts of rules and regulations. Prepare schedules for cleaning inventory, stock of materials. Method of removing waste materials. Check tools before and after use. Identify hazards due to carelessness. Prepare reports on a monthly basis.	Ask students to identify and define the environment, hazards, waste disposals, workstations and hygiene. Let students organise cleaning and storage of tools, materials and equipment. Maximum use of tools and materials.	Home Economics Art & Craft Science Agriculture Science.

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First Aid	Define the term injury, accident and emergency. Acquire help in the event of an accident. How to take care of an accident victim or injured person. Applying first aid treatment for shock, burns, wounds, fracture, eye injury, chocking and poisoning.	What is an injury and an accident. What form of help is required in an accident? How to handle an injured person. What form of first aid to apply to a specific injury? Apply artificial respiration.	Accidents cause serious injuries and emergencies. Injured persons need help quickly. How to handle an injured person. The form of first aid to apply. Procedures for treating shocks, burns, wounds, broken limbs, etc.	Be aware of accident, hazards and avoid them. Assist persons who become injured. Obtain help from eligible persons. Apply first aid treatment to injured person. Practise the step in treating shocks, burns, wounds, broken limbs, poisoning, etc.	Types of accidents injury and emergencies. Requirements and procedures. Contents of a First Aid Kit. Procedures for treating shock, burns, wounds, broken limbs, injury to eye, choking and poisoning. Use of charts, booklets, diagrams and video tapes.	Define the terms associate, with injuries, accidents and emergencies. Explain the type of help needed in the event of an accident. Demonstrate the type of assistance you will offer to an injured person. Explain first aid principles. Treat cases of shock, burns, fractures, poisonings, eye injury, etc.	List types of accidents and injuries sustained. List steps in treating an injured person. Demonstrate first aid treatment and artificial respiration. Treat cases of shock, burns, eye injuries, fractures and poisonings.	Home Economics Agriculture Science Integrated Science Physics Craft.

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Electron Theory	Be able to draw and label a diagram to show the structure of an atom. Define the unit of charge the coulomb. Calculate Q, I at t using the formula $Q=I \times t$.	Draw a diagram to show the structure of an atom and label the parts. Define the unit and state the formula. Know to calculate formula quality of charge, current and time using $Q=It$	The structure of atom. Define matter, element molecules and compound. The symbol and unit of charge, current and time. To calculate the charge Q, the current I and time in a circuit using $Q=I \times t$ $I=Q/t$ $T=Q/I$.	Be aware of the nature of matter – the structure of an atom and the particles of an atom. Draw the symbol, state the unit of Q, I and t. Calculate charge Q, current I and time t using the formula $Q=It$, Students must avoid direct contact with electric charge.	(Knowledge) Matter, elements, molecules compounds and simple electron theory. Structure of an atom, the charge on each particle of an electron. Movements of electrons in an atom. Coulombs per second and ion. Concept of resistance and voltage, Calculation of charge, current and time. .	Define matter, elements, molecule and compound. Show the structure of an atom, showing name of the particles and the charge on each particle. Explain the movement of charges and calculate the charge, current and resistance and time taken for charge. Give example and check students' work to avoid direct contact or transfer of electric charge.	Let students draw a diagram to show the structure of an atom, name the particles and state the charge on each particle. Calculate charge, time and current, voltage and resistance of circuit.	Integrated Science Physics

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OHM's Law	i) Being able to state and verify ohms law as a relationship between current, voltage and resistance. ii) Verify Ohm's Law by experiment. iii) Manipulate formulae involving use of OHM's Law. iv) Perform calculations involving voltage, current and resistance.	State Ohms Law and show the relationship between the quantities. Definition of voltage, current and resistance and units. Change the formula to find V, I and R. To calculate V, I & R in a circuit using Ohms Laws.	The relationships between current, voltage and resistance in a simple circuit. To define and state the units of the quantity V, I and R $V = I \times R$ $I = V / R$ $R = V / I$ To calculate V, I & R using the formulae from Ohm's Law.	Become familiar with definition of qualities and their units as it applies to Ohm's Law. Be able to change the subject of the formula to calculate V, I and R. Calculate V, I & R using values for voltage, current and resistance in a simple circuit. Develop the ability to make accurate measurements and calculations.	Experiment to verify Ohm's Law. Definition and unit of current, voltage and resistance in a circuit. Formulate establishing relationships between current, voltage and resistance. Application of Ohm's Law. Concept of conventional flow of current and electron flow.	Perform experiment with a circuit to find the current, voltage and resistance. Reduce the relationship and write a definition for each quantity and state their symbol and unit name. Manipulate formula and use typical values and calculate V, I and R in circuits.	Define, write symbol and unit name for each quantity. State Ohm's Law and write the formulae for each quantity V, I and R. Calculate voltage, current and resistance in a circuit Ohm's Law:- $V = I \times R$ $I = V / R$ $R = V / I$.	Integrated Science Physics