TRAINING CENTER
SHORT COURSES
BULLETEN
2020
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Chemical Handling for Labours

**OBJECTIVE**

- Enable laboratory technicians and chemists to handle chemicals and carry out the work safely.
- Awareness of safety regulations and the need to use chemicals.
- Understanding the principles and techniques of handling chemicals.
- Identify the chemicals used in the laboratory and the way to handle them.
- How to practice properly with chemicals and handle them.
- How to dispose of chemicals in laboratories and chemical laboratories.

**COURSE DESIGNED FOR**

- Laboratory technicians and chemists: Laboratory technicians and analysts who work in chemical laboratories and industrial plants.

**PREREQUISITES**

- Must be trained personnel who work with chemicals, handlers or those responsible for storing and delivering chemicals.

**DURATION**

3 days

**LANGUAGE(S) USED**

English & Arabic

**COURSE OUTLINE**

- Introduction to chemicals.
- Preparation of chemicals for water treatment.
- Locations for preparing chemicals.
- Precautions to be taken.
- Methods of dealing with chemicals in the laboratory and chemical laboratories.
- Determining the risks of chemicals.

**MAX. NO. OF PARTICIPANTS**

15

**LOCATION**

SWCC Training Center - AL-JUBAIL
**Introduction to Corrosion for Technicians**

**OBJECTIVE**
At the end of this course trainees should be able to know and understand the basic knowledge of Corrosion and its importance.

**COURSE DESIGNED FOR**
- Laboratory Technicians, Chemical Analysts, operators & Mechanical technicians

**PREREQUISITES**
- Employee must be an experienced Laboratory Technician, Chemical Analysts, Operator & Mechanical Technician in an SWCC Power Plant
- Employee must have a basic knowledge of the English language equivalent to the standards shown in the Basic English Course No. 31212.

**DURATION**
3 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Corrosion Fundamentals
- Forms of Corrosion.
- Corrosion Environment
- Corrosion Prevention & Control

**MAX. NO. OF PARTICIPANTS**
15

**LOCATION**
SWCC Training Center - AL-JUBAIL
Objective
At the end of this course trainees should be able to know and understand the effect of oil spill on the operation of the plants and required response for protection of those plants.

COURSE DESIGNED FOR
- Environmental technicians operators & maintenance technicians, instructors in their respective specialties

PREREQUISITES
- Employee must be an environmental technicians, operators & maintenance technicians
- Employee must have a basic knowledge of English language equivalent to the standards shown in the basic English course No. 31212.

DURATION
3 days

LANGUAGE(S) USED
English & Arabic

COURSE OUTLINE
- Sources of oil in the environment & Strategies for oil spill response of chemical compounds.
- Booms.
- Onshore boom demonstration.
- Recovery devices (Skimmers)
- Dispersant.
- Skimmers & dispersant gear
- Desalination plant protection
- Spill assessment, evaluation & practical deployment exercise

MAX. NO. OF PARTICIPANTS
20

LOCATION
SWCC Training Center - AL-JUBAIL
Saline Water Desalination Processes

**Objective**
At the end of this course trainees should be able to know and understand the types of water desalination processes.

**Course Designed For**
- Plant operators.
- Maintenance technicians.
- Planning technicians
- Efficiency technicians
- Instructors in their respective specialties

**Prerequisites**
- Basic knowledge of English language equivalent to the standards shown in the basic English course No. 31212.

**Duration**
3 days

**Language(s) Used**
English & Arabic

**Course Outline**
- Introduction
- Thermal processes
  - Multi stage flash desalination
  - Multiple effect distillation
  - Vapor compression distillation
- Membrane processes
  - Electro-dialysis
  - Reverse Osmosis
- Other processes
  - Freezing
  - Membrane distillation
  - Solar humidification

**Max. No. of Participants**
20

**Location**
SWCC Training Center - AL-JUBAIL
**OBJECTIVE**
At the end of this course trainees should be able to know and understand the process of water desalination using MSF technology.

**COURSE DESIGNED FOR**
- Lab shift chemist.
- Maintenance technician.
- Non MSF operators.
- Planning technicians
- Efficiency technicians
- Instructors in their respective specialties.

**PREREQUISITES**
- Employee must be an experienced maintenance technician or non MSF operator.
- Employee must have a basic knowledge of English language equivalent to the standards shown in the basic English course No. 31212.

**DURATION**
3 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Water sources
- Water quality
- Water demands
- Cause of water shortage
- Solution to water shortage problems
- Desalination history
- Evolution of desalination processes
- Components of desalination plants

**MAX. NO. OF PARTICIPANTS**
20

**LOCATION**
SWCC Training Center - AL-JUBAIL
Objective
At the end of this course trainees should be able to know and understand the concept of Reverse Osmosis process and its application in water desalination.

Course Designed For
- Lab shift chemist.
- Maintenance technician.
- Non RO operators.
- Planning technicians
- Efficiency technicians
- Instructors in their respective specialties.

Prerequisites
- Employee must be an experienced maintenance technician or non RO operator.
- Basic knowledge of English language.

Duration
3 days

Language(s) Used
English & Arabic

Course Outline
- Introduction to reverse osmosis
- Reverse osmosis process
- Membranes and membrane assembly
- RO plant feed water pretreatment
- Pretreatment filtration
- Reverse osmosis plants configuration

Max. No. of Participants
20

Location
SWCC Training Center - AL-JUBAIL
Objectives
At the end of this course trainees should be able to know and understand technology of thermal power plants and its main sections.

Course Designed For
- Non Thermal operators.
- Planning technicians
- Efficiency technicians
- Maintenance technicians.
- Instructors in their respective specialties.

Prerequisites
- Employee must be a maintenance or operation operator.
- Basic knowledge of the English language equivalent to the standards shown in the basic English course No. 31212.

Duration
3 days

Language(s) Used
English & Arabic

Course Outline
- Introduction to power plants.
- General description of power plant.
- Plant systems/steam and water system.
- Plant systems/air & flue gas system.
- Plant systems/auxiliary and secondary steam system.
- Plant systems/bearing cooling water system.
- Plant systems/fuel oil and gas system.
- Plant cycles compressed air system.

Max. No. of Participants
20

Location
SWCC Training Center - AL-JUBAIL
Auxiliary Units Technology for Non-Auxiliary Operators

**OBJECTIVE**
At the end of this course trainees should be able to know and understand technology of Auxiliary units.

**COURSE DESIGNED FOR**
- Non-Auxiliary Operator
- Planning technicians
- Efficiency technicians
- Maintenance technicians.
- instructors in their respective specialties

**PREREQUISITES**
- Employee must have a basic knowledge of English language

**DURATION**
5 Days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Introduction to Auxiliary System.
- Sea water Intake System & Hypochlorite Generation Plant.
- Cooling Water Systems
- Dematerialized Water Treatment Plant.
- Hydrated Lime Water Plant.
- Product Water Treatment Plant & Blending Station.
- Fire Water System.
- Carbon Dioxide Generation Plant.
- Instrument & Service Air Systems.
- Fuel Oil & Fuel Gas System.
- Hydrogen & Oxygen Generation Plant.

**MAX. NO. OF PARTICIPANTS**
20

**LOCATION**
SWCC Training Center - AL-JUBAIL
Process Measurement for Operators

**OBJECTIVE**
At the end of this course trainees should be able to know and understand various measuring techniques and tool and its application in plants and industrial facilities.

**COURSE DESIGNED FOR**
- Operation local operators
- Instructors in their respective specialties

**PREREQUISITES**
- Basic knowledge of english language

**DURATION**
5 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Measurement
- General Characteristics
- Accuracy Of instruments
- Main characteristic of fluids
- Hydrostatic pressure
- Types of pressure measurements
- Measuring open and close tanks
- Bubblers
- Bernoulli equation applications
- Rota meters
- Thermometers
- Resistance temperature detectors (RTD)
- Thermocouples

**MAX. NO. OF PARTICIPANTS**
12

**LOCATION**
SWCC Training Center - AL-JUBAIL
Cooling Water Systems

**OBJECTIVE**
At the end of this course trainees should be able to know and understand the function and types of cooling water systems in power, desalination plants and other industrial facilities.

**COURSE DESIGNED FOR**
- Local field operators
- Instructors in their respective specialties

**PREREQUISITES**
- Plant Local Operator
- Basic knowledge of English language equivalent to the standards shown in the Basic English Course No. 31212.

**DURATION**
3 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Introduction to Desalination Plant Seawater Cooling Water Systems.
- Aux. Cooling Water Systems
- Power Plant Seawater Cooling Water System.
- Cooling Water Systems Operation Procedures

**MAX. NO. OF PARTICIPANTS**
20

**LOCATION**
SWCC Training Center - AL-JUBAIL
Introduction to Mechanical Equipments for Operators

**OBJECTIVE**
At the end of the lesson, the trainees should be able to understand the basic pump concept and know the basic terminology used for pumps.

**COURSE DESIGNED FOR**
- Operation local operators
- Instructors in their respective specialties

**PREREQUISITES**
- Employee must be an experienced in Operation
- Basic knowledge of English language equivalent to the standards shown in the basic English course No. 31212.

**DURATION**
5 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Basic pump concept
- Types of centrifugal pumps
- Types of positive displacement pumps
- Types of valves and operation.
- Types of traps and operation.
- Equipment lubrication and cooling

**MAX. NO. OF PARTICIPANTS**
20

**LOCATION**
SWCC Training Center - AL-JUBAIL
Desalination, Power Plant and Utility Technology for Non-Operation

**OBJECTIVE**
At the end of this course trainees should be able to know and understand the process in plant desalination by different technology and use power plant with utility systems.

**COURSE DESIGNED FOR**
- Planning technician.
- Maintenance technician.
- SBO operator.
- Lab technician.
- Efficiency technician.
- Load coordinator.

**PREREQUISITES**
- Employee must be a maintenance or operation operator
- Basic knowledge of the english language equivalent to the standards shown in the basic english course No. 31212.

**DURATION**
10 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- MSF plant technology.
- RO plant technology.
- Boiler technology.
- Steam & gas turbine technology.
- Utility plant technology.

**MAX. NO. OF PARTICIPANTS**
20

**LOCATION**
SWCC Training Center - AL-JUBAIL
**MED Plant Technology**

**OBJECTIVE**
At the end of this course trainees should be able to know and understand the process of water desalination using MED technology.

**COURSE DESIGNED FOR**
- local operators.
- Planning technician.
- Laboratory Technician
- Efficiency technicians

**PREREQUISITES**
- Employee must be a maintenance or operation operator
- Basic knowledge of the english language equivalent to the standards shown in the basic english course No. 31212.

**DURATION**
5 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Water sources
- Water quality
- Water demands
- Cause of water shortage
- Solution to water shortage problems
- Desalination history
- Evolution of MED desalination processes
- Components of MED desalination plants

**MAX. NO. OF PARTICIPANTS**
20

**LOCATION**
SWCC Training Center - AL-JUBAIL
Heat Exchangers for Operators

**OBJECTIVE**
At the end of this course trainees should be able to know, describe, classify and troubleshoot problems heat exchangers.

**COURSE DESIGNED FOR**
- Plant operator.
- Pipeline operator.
- Instructors in their respective specialties.

**PREREQUISITES**
- Employee must be an experienced MSF Desalination unit local operator.
- Employee must have a basic knowledge of English language equivalent to the standards shown in the basic English course No. 31212.

**DURATION**
5 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Introduction to heat exchangers.
- Description of heat exchangers.
- Classification of heat exchangers.
- Heat exchanger maintenance.
- Heat exchangers cleaning and troubleshooting.

**MAX. NO. OF PARTICIPANTS**
20

**LOCATION**
SWCC Training Center - AL-JUBAIL
Plant Chemistry for Operators

**OBJECTIVE**
At the end of this course trainees should be able to know and understand chemistry and chemicals used and its addition in various desalination and industrial facilities.

**COURSE DESIGNED FOR**
- Plant operators,
- Pipeline operator
- Instructors in their respective specialties

**PREREQUISITES**
- Local desalination and plant operators
- Employee must have a basic knowledge of English language equivalent to the standards shown in the basic English course No. 31212.
- Employee must have basic knowledge of chemistry

**DURATION**
3 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Water Chemistry
- Demineralization process
- Reverse Osmosis
- Boiler water treatment
- Water treatment in desalination processes
- Water chlorination
- Cooling water treatment

**MAX. NO. OF PARTICIPANTS**
20

**LOCATION**
SWCC Training Center - AL-JUBAIL
**Environment in Desalination and Power Plants for Technicians**

**OBJECTIVE**
At the end of this course trainees should be able to know and understand the various pollutants and standards used to preserve the environment in desalination and power plants and other industrial facilities.

**COURSE DESIGNED FOR**
- Environmental technicians,
- Operators & Maintenance technicians,
- Instructors in their respective specialties.

**PREREQUISITES**
- Employee must be an environmental technicians, operators & maintenance technicians
- Basic knowledge of English language equivalent to the standards shown in the basic English course No. 31212.

**DURATION**
3 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Introduction to environment & its relation to desalination & power plants
- Environmental standards for desalination & power plants
- Environmental issues in desalination & power plants
- Waste control & management

**MAX. NO. OF PARTICIPANTS**
20

**LOCATION**
SWCC Training Center - AL-JUBAIL
Corrosion in Industrial Facilities and It's Prevention

**OBJECTIVE**
At the end of this course trainees should be able to know and understand corrosion phenomenon and its prevention and the effect of corrosion on plant economics.

**COURSE DESIGNED FOR**
- Operation and maintenance engineers,
- Instructors in their respective specialties

**PREREQUISITES**
- Employee must have 3 years’ experience as chemist, operation or maintenance supervisor
- Basic knowledge of English language.

**DURATION**
3 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Significance of industrial corrosion.
- Corrosion economics, environment and mechanism.
- Sealers and coatings.
- Electrochemical corrosion in industry.
- Corrosion inhibitors.
- Cathodic protection principles & application.

**MAX. NO. OF PARTICIPANTS**
20

**LOCATION**
SWCC Training Center - AL-JUBAIL
Protection of Desalination and Power Plant from Oil Spill for Engineers

**OBJECTIVE**
At the end of this course trainees should be able to know and understand the effect of oil spill on the operation of the plants and required response for protection of those plants.

**COURSE DESIGNED FOR**
- Environmental specialists, Supervisors.
- Chemists,
- Operation Engineer
- Instructors in their respective specialties

**PREREQUISITES**
- Employee must be an environmental specialist, chemist or supervisory position
- Employee must have a basic knowledge of English language equivalent to the standards shown in the basic English course No. 31212.

**DURATION**
3 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Sources of oil in the environment & Strategies for oil spill response of chemical compounds.
- Onshore boom demonstration.
- Recovery devices (Skimmers)
- Dispersant.
- View skimmers & dispersant gear
- Desalination Plant Protection
- Spill assessment, evaluation & Practical deployment exercise

**MAX. NO. OF PARTICIPANTS**
20

**LOCATION**
SWCC Training Center - AL-JUBAIL
Introduction to Renewable and Non-Renewable Energy

**OBJECTIVE**
At the end of this course trainees should be able to know and understand Energy forms and basics of renewable energy and types.

**COURSE DESIGNED FOR**
- Engineers & Foremans
- Chemists,
- Instructors in their respective specialties

**PREREQUISITES**
- Basic knowledge of english, and mathematics

**DURATION**
5 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Energy fundamentals
- Energy sources
- Introduction to solar thermal energy
- Introduction to solar photovoltaic (PV) and photovoltaic thermal (PV/T)
- Introduction to wind energy
- Introduction to waste-to-energy (WTE)
- Introduction to geothermal energy

**MAX. NO. OF PARTICIPANTS**
20

**LOCATION**
SWCC Training Center - AL-JUBAIL
**Permit to Work**

**OBJECTIVE**
At the end of this course trainees should be able to know and understand the rules and procedures for carrying out all types of Permit to work in the plant or relevant areas and to insure the safety of the personnel carrying out the work and the equipment or systems worked on.

**COURSE DESIGNED FOR**
- Engineers & Foremans

**PREREQUISITES**
- Employee must have a basic knowledge of English language

**DURATION**
5 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Fire safety systems
- Introduction to approved systems.
- Permit to work system.
- General permit to work rules & supplemental permits.
- Electrical safety precaution.
- Instrumentation safety precaution.
- Authorization procedures.
- Forms used (system documents).

**MAX. NO. OF PARTICIPANTS**
20

**LOCATION**
SWCC Training Center - AL-JUBAIL
Industrial Drawings for Operation Engineers

**OBJECTIVE**
At the end of this course trainees should be able to know, understand and read all industrial drawings, its components and symbols.

**COURSE DESIGNED FOR**
- Shift charge engineers
- Shift supervisor
- SBO operator

**PREREQUISITES**
- Employee must be shift Charge, operation or power Engineer.
- Employee must have a good knowledge of English language.

**DURATION**
5 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Electrical symbols,
- Types and how to read electrical diagrams
- Definitions of piping & instrument drawings
- Identification of organizational systems and symbols
- ISA logic symbols

**MAX. NO. OF PARTICIPANTS**
20

**LOCATION**
SWCC Training Center - AL-JUBAIL
**OBJECTIVE**
At the end of this course trainees should be able to know and understand transformers basic theory & types, transformer connections, phase group construction and function of each Part, protection scheme, transformer maintenance & testing.

**COURSE DESIGNED FOR**
- Shift charge engineers
- Shift supervisor
- SBO operator

**PREREQUISITES**
- Employee must be:
  - Shift Charge, operation power Engineer.
  - and a good knowledge of English language

**DURATION**
5 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Reading schematic diagrams
- Wires, circuit components and electrical equipment
- Measuring devices
- Control equipments
- Transformers
- Semiconductors
- Insulations
- Logic Gate
- Types of electrical drawing
- Single line diagram
- Emergency power supply and black-start
- Schematic diagram
- Scope of P&ID
- Identification System
- Symbols

**MAX. NO. OF PARTICIPANTS**
20

**LOCATION**
SWCC Training Center - AL-JUBAIL
**Objective**
At the end of this course trainees should be able to know and understand the role of protective relaying in electric power systems design and operation and types of faults that can occur on generators, transformer, motor, bus bar and transmission line.

**Course Designed For**
- Shift charge engineers
- Shift supervisor
- SBO operator

**Prerequisites**
- Employee must be:
  - Shift Charge, Operation or Power Engineers.
- Employee must have a good knowledge of English language.

**Duration**
5 days

**Language(s) Used**
English & Arabic

**Course Outline**
- Protection zones
- Generator protection
- Transformer protection
- Motor protection
- Bus protection
- Transmission line protection

**Max. No. of Participants**
20

**Location**
SWCC Training Center - AL-JUBAIL
Switch Gear Systems for Operation Engineers

**Objective**
At the end of this course trainees should be able to know and understand switch gear, its Classes and Components, function and construction of circuit breaker and identification of major parts of circuit breaker and its Operation & maintenance.

**Course Designed For**
- Shift charge engineers
- Shift supervisor
- SBO operator

**Prerequisites**
- Employee must be:
  - Shift Charge, operation or power engineer with good knowledge of English language

**Duration**
5 days

**Language(s) Used**
English & Arabic

**Course Outline**
- Switchgear Definitions and Components
- Introduction to Circuit-breakers
- Low voltage Circuit-breakers (Molded Case Type)
- Air break circuit-breaker
- Air blast circuit-breaker
- SF6 circuit-breaker
- Oil circuit-breaker
- Vacuum circuit-breaker
- Testing and maintenance of circuit-breakers

**Max. No. of Participants**
20

**Location**
SWCC Training Center - AL-JUBAIL
**Process Control for Operation Engineers**

**OBJECTIVE**
At the end of this course, trainees should be able to know the dynamic characteristics of process control systems, understand the feedback, cascade, feedforward, ratio and split-range control system and how to troubleshoot the system and practice the tuning and troubleshooting various types of processes.

**COURSE DESIGNED FOR**
- Operation engineers and supervisors, training center instructors with respect to their specialities

**PREREQUISITES**
- Experienced operation engineers and supervisors, basic knowledge of English language

**DURATION**
5 Days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Introduction (Variables of process, Types of process, Process Characteristics, Elements of control, Actions of controller, Failure mode, Continuous and discrete control, Safety Instrument System (SIS))
- Feedback Loop (Principles, Feedback problems, Feedback limitations, Tuning)
- Process Control Strategies (Supervisory control, Cascade Control, Ratio Control, Feedforward Control, Limit, Selector and Override Control)

**MAX. NO. OF PARTICIPANTS**
12

**LOCATION**
SWCC Training Center - AL-JUBAIL
**OBJECTIVE**
At the end of this course trainees should be able to know and understand the process in plant desalination by different technology and use power plant with utility systems.

**COURSE DESIGNED FOR**
- Planning foreman/Sup.v. engineer.
- Maintenance engineer foreman/Sup.v.
- analysis /Senior / Shift chemist
- Efficiency engineer.
- Load coordinator engineer.

**PREREQUISITES**
- Employee must be at least an MSF Desalination Unit Supervisor
- Employee must have a basic knowledge of the English language equivalent to the standards shown in the Basic English Course No. 31212.

**DURATION**
10 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- MSF plant technology.
- RO plant technology.
- Boiler technology.
- Steam & gas turbine technology.
- Utility plant technology.

**MAX. NO. OF PARTICIPANTS**
20

**LOCATION**
SWCC Training Center - AL-JUBAIL
Boiler Technology

**OBJECTIVE**
At the end of this course trainees should be able to know and understand boiler system technology, operation and various protective devices and interlocks.

**COURSE DESIGNED FOR**
- Thermal unit local operators,
- Instructors in their respective specialties
- Auxiliary and desal operators to be assigned as thermal local operators

**PREREQUISITES**
- Participant should be a thermal unit local operator
- Basic knowledge of English language equivalent to the standards shown in the basic English course No. 31212.

**DURATION**
10 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Boiler systems
- Major parts of the boiler
- Boiler associated equipment
- Boiler auxiliaries systems
- Boiler protective devices & interlocks

**MAX. NO. OF PARTICIPANTS**
20

**LOCATION**
SWCC Training Center - AL-JUBAIL
Steam Turbine Technology

**OBJECTIVE**
At the end of this course trainees should be able to know and understand steam turbine system technology, operation and various protective devices and interlocks.

**COURSE DESIGNED FOR**
- Thermal unit local operators,
- Instructors in their respective specialties
- Auxiliary and desal operators to be assigned as thermal local operators

**PREREQUISITES**
- Thermal unit local operator
- Basic knowledge of English language equivalent to the standards shown in the basic English course No. 31212.

**DURATION**
10 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Basic turbine types and associated systems
- Steam turbine components
- Turbine rotor & cylinder construction
- Turbine main & auxiliary valves
- Condenser & associated systems
- Turbine bearing and lubrication System
- Steam turbine protections & interlocks

**MAX. NO. OF PARTICIPANTS**
20

**LOCATION**
SWCC Training Center - AL-JUBAIL
Objective
At the end of this course trainees should be able to know and understand the basics of power plant thermodynamics.

Course Designed For
• Thermal unit local & control operators
• Instructors in their respective specialties

Prerequisites
• Employee must be a thermal unit local operator
• Basic knowledge of english language equivalent to the standards shown in the basic english course No. 31212.

Duration
5 days

Language(s) Used
English & Arabic

Course Outline
• Energy balance of steam plant components
• Steam properties
• Steam processes and plant cycles
• Efficiency of power plant & its main components

Max. No. of Participants
20

Location
SWCC Training Center - AL-JUBAIL
## Generator Hydrogen Seal Oil System

### Objective
At the end of this course trainees should be able to know and understand generator hydrogen seal oil system, hydrogen & carbon dioxide systems operations.

### Course Designed For
- Thermal unit local & control operators
- Instructors in their respective specialties

### Prerequisites
- Employee must be a thermal unit local operator
- Basic knowledge of English language equivalent to the standards shown in the basic English course No. 31212.

### Duration
5 days

### Language(s) Used
English & Arabic

### Course Outline
- Hydrogen seal oil systems operations and shutdowns
- Signals, alarms and interlocks
- Emergency operations and tests
- Generator filling with CO2 gas
- Generator filling with H2 gas
- Safety precautions

### Max. No. Of Participants
20

### Location
SWCC Training Center - AL-JUBAIL
Combined Cycle Technology

**OBJECTIVE**
At the end of this course trainees should be able to know and understand gas turbine system working mechanism, system, combined cycle power plant and HRSG.

**COURSE DESIGNED FOR**
- Thermal unit local & control operators
- Instructors in their respective specialties
- Auxiliary and desal operators to be assigned as thermal local operators

**PREREQUISITES**
- Thermal unit local & CR operator
- Basic knowledge of English language

**DURATION**
5 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Introduction to gas turbine
- Working mechanism of gas turbine
- Gas turbine system
- Combined cycle and HRSG

**MAX. NO. OF PARTICIPANTS**
20

**LOCATION**
SWCC Training Center - AL-JUBAIL
Combined Cycle Power Plant Simulator Operations

**OBJECTIVE**
At the end of this course trainees should be able to know understand and practices the operation procedures for combined cycle plant on simulator.

**COURSE DESIGNED FOR**
- Thermal Unit local & CR operator
- Auxiliary and desal operators to be assigned as thermal local operators

**PREREQUISITES**
- Employee must be a thermal local or CR operator

**DURATION**
15 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Block 20 familiarization
- Block 20 operation philosophy
- 21-Gas turbine startup procedure
- 21-Gas turbine shutdown procedure
- 21-Train cold startup procedure
- 21-Train shutdown procedure
- Block-20 cold startup procedure
- Block-20 shutdown procedure

**MAX. NO. OF PARTICIPANTS**
10

**LOCATION**
SWCC Training Center - AL-JUBAIL
Turbine Hydraulic Control Oil System

**OBJECTIVE**
At the end of this course trainees should be able to know understand the operation of turbine hydraulic control oil system

**COURSE DESIGNED FOR**
- Thermal unit control room operators,
- Instructors in their respective specialties

**PREREQUISITES**
- Employee must be a thermal unit control room operator
- Employee must have a basic knowledge of English language equivalent to the standards shown in the basic English course No. 31212, 12202 and 12203

**DURATION**
5 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Turbine lubricating oil & control oil systems and major components
- Main & auxiliary governor & load limiter
- Exhaust and extraction pressure regulator
- Turbine protective devices load drop anticipator
- Periodical tests of turbine protective devices, valves and AC & DC oil pumps

**MAX. NO. OF PARTICIPANTS**
20

**LOCATION**
SWCC Training Center - AL-JUBAIL
Scaling and Corrosion in Thermal Units

**OBJECTIVE**
At the end of this course trainees should be able to know understand the problems of scaling and corrosion in thermal units and prevention techniques.

**COURSE DESIGNED FOR**
- Thermal unit control room operators,
- Instructors in their respective specialties

**PREREQUISITES**
- Employee must be a thermal unit control room operator, operations supervisor, or Instructors in their respective specialties
- Basic knowledge of English language equivalent to the standards shown in the basic English course No. 31212.

**DURATION**
3 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Cause of scaling & corrosion
- Types of scaling & corrosion
- Prevention of scaling & corrosion
- Preservation
- Acid cleaning

**MAX. NO. OF PARTICIPANTS**
20

**LOCATION**
SWCC Training Center - AL-JUBAIL
Turbine Hydraulic Control Oil System for Engineers

**OBJECTIVE**
At the end of this course trainees should be able to know understand the detailed information on the Turbine Hydraulic Control Oil System

**COURSE DESIGNED FOR**
- Supervisor & Engineer.
- Instructors in their respective specialties

**PREREQUISITES**
- Employee must be a Supervisor or Engineer or Thermal control room operator- thermal instructors.
- Employee must have a basic knowledge of the English language equivalent to the standards shown in the Basic English Course No. 31212.

**DURATION**
5 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Turbine Lubricating Oil & Control Oil Systems and Major Components
- Main & Auxiliary Governor & Load Limiter
- Exhaust and Extraction Pressure Regulator
- Turbine Protective Devices Load Drop Anticipator
- Periodical Tests of Turbine Protective Devices, Valves and AC & DC Oil Pumps

**MAX. NO. OF PARTICIPANTS**
20

**LOCATION**
SWCC Training Center - AL-JUBAIL
Steam Turbine Technology for Non-Operation Engineers

**OBJECTIVE**
At the end of this course trainees should be able to know and understand steam turbine in basic technology and operation including its components, protection and interlocks.

**COURSE DESIGNED FOR**
- Non operation engineers, foremans and supervisors.
- Instructors in their respective specialties.

**PREREQUISITES**
- Employee must be:
  - Non Operation Engineer

**DURATION**
5 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Basic turbine types and associated systems
- Steam turbine components
- Turbine rotor & cylinder construction
- Turbine main & auxiliary valves
- Condenser & associated systems
- Turbine bearing and lubrication system
- Steam turbine protections & interlocks

**MAX. NO. OF PARTICIPANTS**
20

**LOCATION**
SWCC Training Center - AL-JUBAIL
**OBJECTIVE**

At the end of this course trainees should be able to know understand the thermodynamics of power plant and its applications.

**COURSE DESIGNED FOR**

- Shift charge engineers
- Shift supervisor

**PREREQUISITES**

- Working experience as thermal power plant engineer or supervisor

**DURATION**

5 days

**LANGUAGE(S) USED**

English & Arabic

**COURSE OUTLINE**

- Thermal power plant.
- Thermodynamic properties.
- Heat and work.
- Steam tables and steam charts.
- First law of thermodynamics.
- Mass balance and energy balance.
- Steam cycles in power plants.

**MAX. NO. OF PARTICIPANTS**

15

**LOCATION**

SWCC Training Center - AL-JUBAIL
**Combined Cycle Power Plant Simulator Operations for Engineers**

**OBJECTIVE**
At the end of this course trainees should be able to know understand and practices the operation procedures for Gas turbine cycle plant on simulator.

**COURSE DESIGNED FOR**
- Combined plant
- Operation engineers
- Shift supervisor

**PREREQUISITES**
- Employee must be Combined cycle engineers

**DURATION**
10 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Block 20 familiarization
- Block 20 operation philosophy
- 21-Gas turbine startup procedure
- 21-Gas turbine shutdown procedure
- train 21 start up and shutdown

**MAX. NO. OF PARTICIPANTS**
10

**LOCATION**
SWCC Training Center - AL-JUBAIL
**Objective**
At the end of this course trainees should be able to know and understand MSF plant technology, systems and equipment.

**Course Designed For**
- MSF desalination unit local operators,
- Instructors in their respective specialties.

**Prerequisites**
- Employee must be an experienced MSF desalination unit local operator
- Employee must have a basic knowledge of English language equivalent to the standards shown in the Basic English Course No. 31212.

**Duration**
5 days

**Language(s) Used**
English & Arabic

**Course Outline**
- Need for Desalination
- MSF plants principles
- MSF plants processes
- MSF plants heat & mass balance
- MSF plants main design parameters
- MSF plants equipment construction

**Max. No. Of Participants**
20

**Location**
SWCC Training Center - AL-JUBAIL
**Objective**
At the end of this course trainees should be able to know and practice MSF plant start-up and shutdown operations.

**Course Designed For**
- MSF desalination unit local operators
- Instructors in their respective specialties.

**Prerequisites**
- Employee must be an experienced MSF Desalination unit local operator
- Employee must have a basic knowledge of the English language equivalent to the standards shown in the basic English course No. 31212.
- Employee must have attended the course No. 13203

**Duration**
5 days

**Language(s) Used**
English & Arabic

**Course Outline**
- Preparation for cold start-up of the MSF Plant
- Cold start-up to 65% - 70% Load
- Load Increase to 100% - 120%
- Warm & Hot Start-Up
- Shutdown
- Emergency shutdowns

**Max. No. of Participants**
20

**Location**
SWCC Training Center - AL-JUBAIL
**OBJECTIVE**
At the end of this course trainees should be able to know and understand detailed information on MSF plants process controls, interlocks & troubleshooting

**COURSE DESIGNED FOR**
- MSF Desalination plant local and control room operators.
- Instructors in their respective specialties.

**PREREQUISITES**
- Employee must be an experienced MSF desalination unit local operator
- Basic knowledge of english language equivalent to the standards shown in the basic english course No. 31212.
- Employee must have attended course Nos. 13203 and 13204

**DURATION**
10 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- MSF plants processes
- MSF plants practices
- MSF plants process controls
- MSF plants interlocks
- MSF plants troubleshooting

**MAX. NO. OF PARTICIPANTS**
20

**LOCATION**
SWCC Training Center - AL-JUBAIL
Reverse Osmosis Technology

**OBJECTIVE**
At the end of this course trainees should be able to know and understand the main principles of Reverse Osmosis process and its application for water desalination.

**COURSE DESIGNED FOR**
- R.O desalination plant local operators, R.O auxiliary operators working in R.O plants
- Instructors in their respective specialties
- MED-MSF desalination local operators to be assigned as R.O. Desalination plant local operators

**PREREQUISITES**
- Employee must be R.O desalination plant local operator
- Employee must have a basic knowledge of English language equivalent to the standards shown in the basic English course No. 31212.

**DURATION**
5 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Membrane processes (UF, NF & RO)
- Explanation of Osmosis & Reverse Osmosis
- R.O. systems
- R.O. membrane characteristics and assembly
- Types & configurations of RO membranes
- R.O. Pre-treatment
- Types of fouling on RO membranes
- R.O plant staging
- Energy consumption & recovery
- R.O. plant operation

**MAX. NO. OF PARTICIPANTS**
20

**LOCATION**
SWCC Training Center - AL-JUBAIL
**OBJECTIVE**

At the end of this course trainees should be able to know and understand RO process control, interlocks and troubleshooting operations.

**COURSE DESIGNED FOR**

- R.O. Desalination plant local operators
- Auxiliary operators working in R.O plants
- MED-MSF desalination local operators to be assigned as R.O. Desalination plant local operators

**PREREQUISITES**

- Employee must be an experienced RO desalination plant local operator
- Basic knowledge of English language equivalent to the standards shown in the basic English course No. 31212.
- Employee must have attended course No. 13207

**DURATION**

5 days

**LANGUAGE(S) USED**

English & Arabic

**COURSE OUTLINE**

- R.O desalination plant process
- Plant practices
- Plant operations & controls
- Interlocks, alarms & set values
- System start-up & shutdown
- Operating troubles & troubleshooting

**MAX. NO. OF PARTICIPANTS**

20

**LOCATION**

SWCC Training Center - AL-JUBAIL
**MED Desalination Plant Operation**

**OBJECTIVE**
At the end of this course trainees should be able to know and understand MED plant operations & process controls, interlocks and troubleshooting.

**COURSE DESIGNED FOR**
- MED desalination local operators

**PREREQUISITES**
- Employee must be an experienced MED desalination unit local operator
- Basic knowledge of English language equivalent to the standards shown in the basic English course No. 31212.

**DURATION**
5 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Preparation and cold start-up of MED Plant
- Shutdown & emergency shutdown
- Process controls
- Interlocks
- Troubleshooting

**MAX. NO. OF PARTICIPANTS**
20

**LOCATION**
SWCC Training Center - AL-JUBAIL
**MED Desalination Plants Simulator Operations 13215**

**OBJECTIVE**
At the end of this course trainees should be able to know and practice all MED desalination Plant control room operations.

**COURSE DESIGNED FOR**
- MED desalination plant local, and control room Operators

**PREREQUISITES**
- Employee must be an experienced MED plant local operator who has received on-job training and acting as control room operator.
- Basic knowledge of English language equivalent to the standards shown in the basic English course No. 31212.
- Employee must have attended short course No. 13213 and 13214

**DURATION**
10 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Introduction to MED desalination plant simulator
- MED desalination plant start-up procedures
- MED desalination plant shutdown procedures
- MED desalination plant emergency shutdown procedures
- Troubleshooting operations for MED desalination Plant.
- MED desalination plant acid cleaning

**MAX. NO. OF PARTICIPANTS**
6

**LOCATION**
SWCC Training Center - AL-JUBAIL
Reverse Osmosis Desalination Plants Simulator Operations

**Objective**
At the end of this course trainees should be able to know and practice all RO desalination Plant control room operations.

**Course Designed For**
- RO desalination plants local operators and auxiliary operators working in R.O plants

**Prerequisites**
- Employee must be an experienced RO desalination plant local operator for at least of 2 years
- Basic knowledge of english language equivalent to the standards shown in basic english course No. 31212.
- Employee must have attended short courses No. 13207 and 13208

**Duration**
10 days

**Language(s) Used**
English & Arabic

**Course Outline**
- Introduction to RO plant
- Introduction to RO Simulator
- RO plant pre-start checks
- RO plant pre-treatment start-up
- RO trains & post-treatment start-up
- RO plant shutdown
- Malfunctions & troubleshooting

**Max. No. of Participants**
5

**Location**
SWCC Training Center - AL-JUBAIL
Control of Scaling and Corrosion in MSF Plant

**OBJECTIVE**
At the end of this course trainees should be able to know and understand detailed information about Scaling and Corrosion Control in MSF Desalination Plants.

**COURSE DESIGNED FOR**
- MSF Desalination Control Room Operators

**PREREQUISITES**
- Employee must be an experienced MSF Desalination Control Room Operator
- Employee must have a basic knowledge of the English language equivalent to the standards shown in the Basic English Course No. 31212.

**DURATION**
3 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Scaling
- Sea Water Chemistry
- Types of Deposits
- The Chemistry of Alkaline Scale
- The Chemistry of Calcium Sulfate Scaling
- Techniques of Scale abatement and control
- Corrosion
- Introduction to Corrosion
- Corrosion Principles
- Common forms of Corrosion
- Corrosion in MSF Plants
- Corrosion Prevention

**MAX. NO. OF PARTICIPANTS**
20

**LOCATION**
SWCC Training Center - AL-JUBAIL
Performance of Pretreatment System in Reverse Osmosis Plants

**OBJECTIVE**
At the end of this course trainees should be able to know and understand the pretreatment system and its importance to the successful operation of RO plants.

**COURSE DESIGNED FOR**
- RO desalination plant control room
- RO local and auxiliary operators working in
- R.O plants with at least 2 years’ experience

**PREREQUISITES**
- Basic knowledge of English language equivalent to the standards shown in the basic English course No. 31212

**DURATION**
5 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Feed water source & characteristics
- Pre-treatment requirements – staging
- Disinfection–coagulation-sedimentation
- Media filtration & media types/characteristics
- Under drain systems – backwash – malfunctions
- Filter operations & performance
- Scale control – fouling – SDI

**MAX. NO. OF PARTICIPANTS**
20

**LOCATION**
SWCC Training Center - AL-JUBAIL
Objective
At the end of this course trainees should be able to know and understand the main principles of Reverse Osmosis process and operation and its application in water desalination.

Course Designed For
- Graduate Engineers, senior Chemists, R.O supervisors & foreman’s

Prerequisites
- Employee must have experience as a Junior engineer or RO desalination plant operations supervisor
- Basic knowledge of English language equivalent to the standards shown in the elementary English course No. 31214

Duration
5 days

Language(s) Used
English & Arabic

Course Outline
- Principles of Reverse Osmosis
- Membrane characteristics
- Membrane assembly
- Membrane configuration
- RO plant configuration
- Pretreatment process
- Coagulation and flocculation
- Filtration
- Troubleshooting filtration problems
- Troubleshooting membrane problems
- Chemical cleaning
- Energy recovery devices

Max. No. of Participants
20

Location
SWCC Training Center - AL-JUBAIL
**OBJECTIVE**
At the end of this course trainees should be able to know and make all MSF Desalination Plant process calculations.

**COURSE DESIGNED FOR**
- Shift charge engineer.
- Desal engineer.
- Efficiency engineers and MSF desalination plants supervisors.

**PREREQUISITES**
- Employee must be at least a MSF desalination unit supervisor.
- Basic knowledge of English language equivalent to the standards shown in the basic English course No. 31212.

**DURATION**
5 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Review of MSF desalination
- Heat transfer
- Design specifications
- Examples how to calculate the following:
  a- Concentration ratio (CR)
  b- Actual concentration ratio (ACR)
  c- Energy balance
  d- Material balance on water & salt
  e- Brine recycle, cooling water & product water flow rates
  f- Performance ratio
  g- Heat transfer coefficient, fouling Factor and efficiency

**MAX. NO. OF PARTICIPANTS**
15

**LOCATION**
SWCC Training Center - AL-JUBAIL
**MED Desalination Plants Technology and Operation for Engineers**

**OBJECTIVE**
At the end of this course trainees should be able to know and make all MED desalination plant process calculations.

**COURSE DESIGNED FOR**
- MED & MSF desalination plant engineer's

**PREREQUISITES**
- Employee must be an experienced MED desalination plant operation & maintenances engineer

**DURATION**
10 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Need for desalination
- MED plants principles
- MED plants processes
- MED plants heat & mass balance
- MED plants main design parameters
- MED plants equipment construction
- Plant preservation procedure of evaporator
- Plant draining, filling & flushing
- Introduction to MED desalination plant simulator
- MED desalination plant start-up procedures
- MED desalination plant shutdown procedures
- MED desalination plant emergency shutdown procedures
- Troubleshooting operations for MED desalination plant.
- MED desalination plant acid cleaning

**MAX. NO. OF PARTICIPANTS**
6

**LOCATION**
SWCC Training Center - AL-JUBAIL
Fouling and Chemical Cleaning in Reverse Osmosis Plants

**OBJECTIVE**
At the end of this course trainees should be able to know and understand phenomenon of membrane fouling, tips and procedures for effective chemical cleaning of RO membranes.

**COURSE DESIGNED FOR**
- R.O supervisors, shift charge engineers, chemists & membrane technicians

**PREREQUISITES**
- Employee must be foreman, supervisor or shift charge engineer in RO plant
- Basic knowledge of English language

**DURATION**
3 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Fouling and fouling agents
- Mechanism of membrane fouling
- Types of foulants
- Foulants removal
- Chemical cleaning of RO membranes

**MAX. NO. OF PARTICIPANTS**
20

**LOCATION**
SWCC Training Center - AL-JUBAIL
**MED Desalination Plants Calculations for Engineers**

**Objective**
At the end of this course trainees should be able to know and make all MED Desalination Plant process calculations.

**Course Designed For**
- Desal Engineer
- MED plant shift supervisor

**Prerequisites**
- Employee must be an experienced MED desalination plant operation engineer and attended MED technology course No. 13406

**Duration**
5 days

**Language(s) Used**
English & Arabic

**Course Outline**
- Single effect evaporation system calculations
- Single effect evaporation vapor compression system calculations
- Multiple effect evaporation plant
- MED-TVC Plant Description
- MED-TVC Design Calculations
- MED-TVC Operation Calculation

**Max. No. of Participants**
15

**Location**
SWCC Training Center - AL-JUBAIL
Reverse Osmosis Simulator Operations for Engineers

**OBJECTIVE**
At the end of this course trainees should be able to know and practice all control room operator tasks during plant operation.

**COURSE DESIGNED FOR**
- RO desalination shift charge engineers, supervisors and foremans

**PREREQUISITES**
- Employee must be an RO shift charge engineer, supervisor and foreman with at least one year experience
- Basic knowledge of English language.
- Employee must have attended short course No. 13401

**DURATION**
5 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Introduction to RO plant
- Introduction to RO Simulator
- RO plant pre-start checks
- RO plant start-up procedure
- RO plant shutdown procedure
- Malfunctions & troubleshooting of RO plants

**MAX. NO. OF PARTICIPANTS**
5

**LOCATION**
SWCC Training Center - AL-JUBAIL
Diesel Engine Technology and Operation

**OBJECTIVE**
At the end of this course trainees should be able to know and understand detailed information with regard to the technology and operations of diesel engines.

**COURSE DESIGNED FOR**
- Auxiliary Units Local Operators, Instructors in their respective specialities

**PREREQUISITES**
- Plant Aux Operator.
- Basic knowledge of English language equivalent to the standards shown in the Basic English Course No. 31212.

**DURATION**
5 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Introduction To Diesel Engines, Cycles & Efficiency
- Diesel Engine Technology And Major Components,
- Auxiliary Systems.
- Diesel Engines Operations & Troubleshooting.

**MAX. NO. OF PARTICIPANTS**
20

**LOCATION**
SWCC Training Center - AL-JUBAIL
**Intake System and Sodium Hypochlorite Generation Plant**

**OBJECTIVE**
At the end of this course trainees should be able to know and understand operation of the intake system & sodium hypochlorite generation Plant

**COURSE DESIGNED FOR**
- Auxiliary unit operators
- Desalination unit local operators
- Instructors in their respective specialities

**PREREQUISITES**
- Employee must be an experienced auxiliary unit operator or desalination unit local operator
- Basic knowledge of English language equivalent to the standards shown in the basic English course No. 31212.

**DURATION**
5 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Intake system description
- Sodium hypochlorite generation plant description
- Acid cleaning system
- System instrumentation
- Start-up, shutdown, black start-up
- Troubleshooting operations

**MAX. NO. OF PARTICIPANTS**
20

**LOCATION**
SWCC Training Center - AL-JUBAIL
Carbon Dioxide Generation Plant Operation

**OBJECTIVE**
At the end of this course trainees should be able to know and understand theoretical knowledge and practical skills required to enable them to assume the duties of a auxiliary operator in carbon dioxide systems.

**COURSE DESIGNED FOR**
- Auxiliary Units Operators.
- Water treatment operator.
- Chemical operator.
- RO local operator.
- Instructors in their respective specialties

**PREREQUISITES**
- Plant Aux Operator.
- Basic knowledge of English language equivalent to the standards shown in the Basic English Course No. 31212.

**DURATION**
5 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Carbon dioxide production process
- Carbon dioxide generation plant operation
- Troubleshooting operation

**MAX. NO. OF PARTICIPANTS**
20

**LOCATION**
SWCC Training Center - AL-JUBAIL
**Water Treatment Demineralization Plant Operation**

**OBJECTIVE**
At the end of this course trainees should be able to know and understand the Operations of the demineralized water treatment plant.

**COURSE DESIGNED FOR**
- Auxiliary plant operator
- Water treatment operator.
- Chemical operator.
- Instructors in their respective specialties.

**PREREQUISITES**
- Employee must be an experienced auxiliary unit operator.
- Basic knowledge of English language equivalent to the standards shown in the basic English course No. 31212.

**DURATION**
3 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Ion exchange theory & equipment
- Cation, anion & mixed bed exchangers
- Make-up water system
- Regeneration procedure
- Start-up and shutdown procedure
- Troubleshooting

**MAX. NO. OF PARTICIPANTS**
20

**LOCATION**
SWCC Training Center - AL-JUBAIL
PRODUCT WATER TREATMENT PLANT OPERATION

OBJECTIVE
At the end of this course trainees should be able to know and understand operations of the product water treatment plant.

COURSE DESIGNED FOR
- Auxiliary plant operator
- Water treatment operator.
- Chemical operator (Yanbu).
- RO local operator.
- Instructors in their respective specialties.

PREREQUISITES
- Employee must be an experienced auxiliary unit operator
- Basic knowledge of English language equivalent to the standards shown in the basic English course No. 31212.

DURATION
5 days

LANGUAGE(S) USED
English & Arabic

COURSE OUTLINE
- Purpose of product water treatment plant
- Process and flow description
- Lime water injection system
- Carbon dioxide dosing system
- Chlorine dosing system
- Preliminary operations, start-up & shutdown procedure
- Troubleshooting operations

MAX. NO. OF PARTICIPANTS
20

LOCATION
SWCC Training Center - AL-JUBAIL
Lime Water Treatment Plant Operation

**OBJECTIVE**
At the end of this course trainees should be able to know and understand theoretical knowledge and practical skills required to enable them to assume the duties of a auxiliary operator in lime water treatment unit.

**COURSE DESIGNED FOR**
- Auxiliary Units Operators.
- Water treatment operator.
- Chemical operator.
- RO local operator
- Instructors in their respective specialties

**PREREQUISITES**
- Plant Aux Operator.
- Basic knowledge of English language equivalent to the standards shown in the Basic English Course No. 31212.

**DURATION**
3 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Introduction to lime plant
- Flow and process description
- Lime water plant operation
- Operation troubleshooting

**MAX. NO. OF PARTICIPANTS**
20

**LOCATION**
SWCC Training Center - AL-JUBAIL
**Objective**
At the end of the course, the operators will be able to more confidently and efficiently carry out their duties with increased knowledge of fuel supply systems operation.

**COURSE DESIGNED FOR**
- Auxiliary Units Operators.
- Thermal operator
- Instructors in their respective specialties

**PREREQUISITES**
- Plant Aux Operator.
- Basic knowledge of English language equivalent to the standards shown in the Basic English Course No. 31212.

**DURATION**
3 days

**Language(s) Used**
English & Arabic

**Course Outline**
- Description of fuel oil system
- Fuel oil transfer
- Station secondary steam system
- Fuel oil tank unloading
- Fuel tank unloading from ship tanker terminal
- Fuel gas system

**Max. No. Of Participants**
20

**Location**
SWCC Training Center - AL-JUBAIL
Compressed Air Systems Operation

**OBJECTIVE**
At the end of this course trainees should be able to know and understand instrument, service Air systems operation and troubleshooting.

**COURSE DESIGNED FOR**
- Auxiliary plant operator
- RO control room & local operator.
- Instructors in their respective specialties

**PREREQUISITES**
- Employee must be an experienced auxiliary unit operator
- Basic knowledge of English language equivalent to the standards shown in the basic English course No. 31212.

**DURATION**
5 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Gas compression
- Types of air compressors
- Instrument and service air systems flow descriptions
- Compressed air system operations
- Control systems
- Troubleshooting operations

**MAX. NO. OF PARTICIPANTS**
20

**LOCATION**
SWCC Training Center - AL-JUBAIL
Fire Water System Operation

**Objective**
At the end of this course trainees should be able to know and understand the theoretical knowledge and practical skills required to enable them to assume the duties of a auxiliary operator in firefighting system.

**Course Designed For**
- Auxiliary Units Operators.
- SBO operator.
- Thermal local operator
- Instructors in their respective specialties

**Prerequisites**
- Plant Aux Operator.
- Basic knowledge of English language equivalent to the standards shown in the Basic English Course No. 31212.

**Duration**
3 days

**Language(s) Used**
English & Arabic

**Course Outline**
- Intro to Classes of Fire & Extinguishing Agent
- Fire water system.
- Automatic sprinkler systems
- Foam system

**Max. No. Of Participants**
20

**Location**
SWCC Training Center - AL-JUBAIL
**Introduction to Hydraulic**

**OBJECTIVE**
At the end of this course trainees should be able to know and understand fluid mechanics, pumps operational problems and pumps specifications.

**COURSE DESIGNED FOR**
- Pump station and pipe line operators
- Mechanical technicians

**PREREQUISITES**
- Employee must be an experienced pump station or pipe line operator
- Basic knowledge of English language equivalent to the standards shown in the basic English course No. 31212.

**DURATION**
3 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Fluid mechanics (Basic)
- Friction heat losses in pipe lines and pipe line fittings
- N.P.S.H. and cavitations in centrifugal pumps
- Characteristic curves and pecial specifications of centrifugal pumps

**MAX. NO. OF PARTICIPANTS**
20

**LOCATION**
SWCC Training Center - AL-JUBAIL
**Introduction to Pipeline SCADA System**

**OBJECTIVE**
At the end of this course the trainee should be able to understand and operate the electrical network of pump station locally or remotely.

**COURSE DESIGNED FOR**
- Pipeline operators
- Senior pump stations operators.

**PREREQUISITES**
- Employee must be an experienced pipeline or senior pump stations operator

**DURATION**
5 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Presentation of general SCADA system
- Common HW And SW architecture
- Machine Operation mode
- M.M.I
- Data management & data acquisition
- Alarms / events and diagnostics management
- Summary management
- Records page and parameter change
- Events archive (Ledger)
- Operational historical archives
- Trend graphs
- Commands and sequences
- Logging and recording

**MAX. NO. OF PARTICIPANTS**
20

**LOCATION**
SWCC Training Center - AL-JUBAIL
Hydraulic Calculation for Pipeline Engineers

**OBJECTIVE**
At the end of this course trainees should be able to know, understand properties of fluids, mass and energy balance and be able to perform related calculations.

**COURSE DESIGNED FOR**
- Operation engineers.
- Pipeline engineers.
- Mechanical engineer.

**PREREQUISITES**
- Basic knowledge of thermodynamics
- Basic knowledge of English language

**DURATION**
5 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Fluids and their properties
- Hydrostatics
- Fluid flow - mass balance
- Fluid flow - energy balance
- Pipe flow & calculation of energy - loss

**MAX. NO. OF PARTICIPANTS**
15

**LOCATION**
SWCC Training Center - AL-JUBAIL
Laboratory Safety Level 1

**Objective**
At the end of this course trainees should be able to know and understand the basic principles of safety in chemical laboratories.

**Course Designed For**
- Laboratory assistant technicians.

**Prerequisites**
- Employee must be a laboratory assistant technician.
- Basic knowledge of English language equivalent to the standards shown in the basic English course No. 31212.

**Duration**
3 days

**Language(s) Used**
English & Arabic

**Course Outline**
- Basic principles of safety in chemical laboratories
- Identification of main risks in chem. labs
- Main hazardous chemicals.
- Personal protection equipment (PPE).

**Max. No. of Participants**
10

**Location**
SWCC Training Center - AL-JUBAIL
Analysis by Gas Chromatography (GC)

**OBJECTIVE**
At the end of this course trainees should be able to know and understand the basic principles, importance & applications of gas chromatography, with simple practice on GC instrument.

**COURSE DESIGNED FOR**
- Laboratory technicians and chemical analysts

**PREREQUISITES**
- Employee must be a laboratory technician or chemical analyst.
- Basic knowledge of English language equivalent to the standards shown in the basic English course No. 31212.

**DURATION**
3 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Basic principles of chromatography.
- Gas chromatography concept.
- Gas chromatography instrumentation
- Practical analysis of gas chromatography
- Applications of gas chromatography in industrial facilities.

**MAX. NO. OF PARTICIPANTS**
10

**LOCATION**
SWCC Training Center - AL-JUBAIL
**Objective**
At the end of this course trainees should be able to know and understand the basic principles of oil analysis in desalination, power and other industrial facilities.

**Course Designed For**
- Laboratory technicians and chemical analysts

**Prerequisites**
- Employee must be a laboratory technician or chemical analyst.
- Basic knowledge of English language equivalent to the standards shown in the basic English course No. 31212.

**Duration**
3 days

**Language(s) Used**
English & Arabic

**Course Outline**
- Uses & importance of oil in desal. & power plants.
- Main parameters in oil analysis (acid number, viscosity, flash point, sulfur content, moisture & sediments content, ...etc.)
- Methods of oil analysis according to ASTM standards.
- Acceptable ranges of oil parameters.

**Max. No. of Participants**
10

**Location**
SWCC Training Center - AL-JUBAIL
Analysis by Atomic Absorption for Laboratory Technicians

**OBJECTIVE**
At the end of this course trainees should be able to know and understand the principles of atomic absorption spectrophotometer and practice specific testing on the equipment.

**COURSE DESIGNED FOR**
- Laboratory technicians and chemical analysts

**PREREQUISITES**
- Employee must be an experienced laboratory technician, or chemical analysts
- Basic knowledge of english language equivalent to the standards shown in the elementary english course No. 31212

**DURATION**
3 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Introduction to atomic spectroscopy
- Theory and instrumentation
- Samples preparation and separation methods
- Practical demonstration on flame atomic absorption
- Analysis by air-acetylene flame
- Analysis by nitrous oxide-acetylene flame interferences

**MAX. NO. OF PARTICIPANTS**
10

**LOCATION**
SWCC Training Center - AL-JUBAIL
Sampling Techniques in Desalination Plants

**OBJECTIVE**
At the end of this course trainees should be able to know, understand different sampling techniques and methods.

**COURSE DESIGNED FOR**
- Laboratory assistant technician.

**PREREQUISITES**
- Employee must be a laboratory assistant technician.
- Basic knowledge of English language equivalent to the standards shown in the basic English course No. 31212.

**DURATION**
3 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Sampling methods in desal plants..
- Monitoring devices in desal plants.
- Samples of chemical substances.
- Safety precautions in chemical sampling.

**MAX. NO. OF PARTICIPANTS**
10

**LOCATION**
SWCC Training Center - AL-JUBAIL
**General Chemistry**

**OBJECTIVE**
At the end of this course trainees should be able to know and understand knowledge of assistant laboratory technicians in theoretical chemistry.

**COURSE DESIGNED FOR**
- Assistant Laboratory technicians.

**PREREQUISITES**
- Employee must be an assistant laboratory technician
- Employee must have a basic knowledge of the English language equivalent to the standards shown in the Basic English Course

**DURATION**
5 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Classification of chemical substances
- Atomic structure & electronic configuration.
- Formulas and equations..
- Chemical bonds.
- Chemical nomenclature
- Solution chemistry.

**MAX. NO. OF PARTICIPANTS**
10

**LOCATION**
SWCC Training Center - AL-JUBAIL
**Volumetric Analysis for Laboratory Technicians**

**OBJECTIVE**
At the end of this course trainees should be able to know and understand chemical analytical skills required for chemical preparation and testing.

**COURSE DESIGNED FOR**
- Laboratory technicians.

**PREREQUISITES**
- Employee must be a laboratory technician.
- Basic knowledge of English language equivalent to the standards shown in the basic English course No. 31212.

**DURATION**
3 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Basic units & measurements.
- Solubility of chemical compounds.
- Concentration units.
- Preparation of chemical solutions.
- Acids & basis solutions.
- Standard solutions.
- Types of volumetric titration.
- Results evaluation in chemical analysis.

**MAX. NO. OF PARTICIPANTS**
10

**LOCATION**
SWCC Training Center - AL-JUBAIL
Laboratory Safety Level 2

🎯 **OBJECTIVE**
At the end of this course trainees should be able to know and understand the procedures of general safety in chemical laboratories.

🎀 **COURSE DESIGNED FOR**
- Lab analysts, lab technicians.

🎉 **PREREQUISITES**
- Employee must be an experienced laboratory analyst or laboratory technician.
- Basic knowledge of english language equivalent to the standards shown in the basic english course No. 31212.

📅 **DURATION**
3 days

🌐 **LANGUAGE(S) USED**
English & Arabic

📚 **COURSE OUTLINE**
- Laboratory safety program.
- Classification of Hazardous Chemicals.
- Chemicals handling & storage.
- Compressed gases storage & handling.
- Laboratory waste disposal.
- Personal protective equipments.
- Ventilation in chemical laboratories.
- Radiation hazards.
- Safe use of laboratory equipments.
- Accidents management in chemical laboratories.

👥 **MAX. NO. OF PARTICIPANTS**
10

📍 **LOCATION**
SWCC Training Center - AL-JUBAIL
UV Spectrophotometer Analysis

**OBJECTIVE**
At the end of this course trainees should be able to know and understand the principles of Analysis by Spectroscopy UV.

**COURSE DESIGNED FOR**
- Laboratory Technicians & analyst.

**PREREQUISITES**
- Employee must be an experienced Laboratory Technician in SWCC Power Plant.
- Employee must have a basic knowledge of the English language equivalent to the standards shown in the Elementary.

**DURATION**
5 Days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Introduction to Analysis by Spectroscopy UV
- Theory and Instrumentation
- Identification of different methods of analyses.
- Identification about different reagents and how to prepare.

**MAX. NO. OF PARTICIPANTS**
8

**LOCATION**
SWCC Training Center - AL-JUBAIL
Electrical Print Reading

**OBJECTIVE**
At the end of this course, trainees should know electrical symbols, type of electrical drawing and electrical schematic diagrams, understand the basic knowledge of electrical troubleshooting, practice reading, and be capable to trace electrical faults using electrical drawing.

**COURSE DESIGNED FOR**
- Electrical Maintenance Technicians
- Switchgear operators
- Employee those fulfill in the electrical maintenance works.

**PREREQUISITES**
- Employee must be an experienced Electrical Maintenance Technician or Assistant Electrical Maintenance Technician.
- Employee must have a basic knowledge of the English language

**DURATION**
5 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Electrical Symbols
- Type of Electrical Drawing
- Electrical Schematic Diagrams
- Electrical Single line diagram
- Schematic & Wiring Diagrams
- Practical Application and Tracing of Electrical Drawing
- Logic and Interlock Drawing

**MAX. NO. OF PARTICIPANTS**
20

**LOCATION**
SWCC Training Center - AL-JUBAIL
Objective
At the end of this course, the trainee should know the explanations of the troubles, and understand the common fault causes of electrical equipment specifically that of motors, motor control circuits, control devices, and circuit breakers. Practice some real cases faults where the trainee should spot where is the root cause of the fault.

Course Designed For
• Electrical Maintenance Technicians
• Switchgear operators
• Employee those fulfil in the electrical maintenance works.

Prerequisites
• Employee must be an experienced Electrical Maintenance Technician.
• Employee must have a basic knowledge of the English language
• Employee must have attended Course No. 21203.

Duration
5 days

Language(s) Used
English & Arabic

Course Outline
• Troubleshooting DC motors
• Troubleshooting A.C. Motors
• Troubleshooting of control circuits
• Motor testing techniques.
• Troubleshooting of control devices

Max. No. of Participants
15

Location
SWCC Training Center - AL-JUBAIL
Protection System

**OBJECTIVE**
At the end of this course, the trainees should know protection relay principles, construction, types, understand applications in different electrical equipment specially generator, transformer, motor, busbars, and transmission protection systems. Practice various relays testing perform needed calibration if applicable

**COURSE DESIGNED FOR**
- Electrical protection Technicians
- Employee those fulfil in the electrical protection works.

**PREREQUISITES**
- To provide detailed information on Protective Relays and Protection System.
- Employee must have a basic knowledge of the English language equivalent to the standards shown in the Basic English Course.

**DURATION**
5 Days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Introduction of protection zones and electrical faults
- Generators protection system.
- Transformers protection system.
- Motors protection system.
- Bus bars protection system.
- Transmission protection system.

**MAX. NO. OF PARTICIPANTS**
15

**LOCATION**
SWCC Training Center - AL-JUBAIL
Motors Testing and Maintenance

**OBJECTIVE**
At the end of this course, trainees should know motor types and applications, motor construction and characteristics, motor windings & insulation. Understand motor maintenance, testing, troubleshooting. Practice various motor operation and maintenance exercises.

**COURSE DESIGNED FOR**
- Electrical Maintenance Technicians

**PREREQUISITES**
- Employee must be an experienced Electrical Maintenance Technician or Assistant Electrical Maintenance Technician
- Employee must have a basic knowledge of the English language equivalent to the standards shown in the Basic English Course No. 31212.

**DURATION**
10 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Motor Types & Applications
- Motor Construction & Characteristics
- Induction Synchronous & D.C. Motors
- Motor Winding & Insulation
- Motor Maintenance & Testing
- Motor Troubleshooting & Protection

**MAX. NO. OF PARTICIPANTS**
15

**LOCATION**
SWCC Training Center - AL-JUBAIL
**Objective**
At the end of this course, the trainee should know the basics skills in various aspects of installation work, understand the different domestic circuits, their accessories, practice and install many domestic and industrial installation including both lighting and powering. Practice layout of different electrical joints, cables, devices and equipment.

**Course Designed For**
- Electrical Maintenance Assistant Technician
- Electrical Maintenance Technician.
- Employee those fulfill electrical domestic and industrial installations.

**Prerequisites**
- Employee must have attended Electrical Safety rules course NO. 21200 or any equivalent.
- Employee must have a basic knowledge of the English language.

**Duration**
10 days

**Language(s) Used**
English & Arabic

**Course Outline**
- Basic concepts of electrical installation.
- Electrical installation accessories.
- Electrical installation fitting, symbols and drawing.
- Lighting and power installation circuit.

**Max. No. Of Participants**
12

**Location**
SWCC Training Center - AL-JUBAIL
Circuit Breaker Testing and Maintenance

**OBJECTIVE**
At the end of this course, the trainees should know the different types of circuit breaker, understand the maintenance procedure for circuit breaker. Practice Insulation Resistance Test, Contact Resistance Test, and Closing time of each pole.

**COURSE DESIGNED FOR**
- Electrical Maintenance Assistant Technician
- Electrical Maintenance Technician.
- Employees those fulfill in CB maintenance.

**PREREQUISITES**
- Employee must have attended
  - Circuit breaker principle (21221)
  - Testing of electrical equipment 1 (21224)
- Employee must have a basic knowledge of the English language equivalent to the standards shown in the Basic English Course E-1 and E-2.

**DURATION**
5 Days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Description of maintenance procedure for:
  1- Molded case circuit breaker.
  2- Air circuit breaker
  3- Minimum oil circuit breaker
  4- Vacuum circuit breaker
  5- Sulphur hexafluoride circuit breaker
- Trouble shooting of different parts of operation mechanism and faults.

**MAX. NO. OF PARTICIPANTS**
15

**LOCATION**
SWCC Training Center - AL-JUBAIL
Technology and Maintenance of Batteries

**OBJECTIVE**
At the end of this course, the trainees should know Different type of cells and batteries construction, understand required maintenance practices and instructions for managing, maintaining, and testing critical battery systems. Practice Troubleshooting of various faults and identifying the battery hazardous.

**COURSE DESIGNED FOR**
- Electrical Maintenance Technicians
- Asst. Electrical Maintenance Technicians
- Employees those who currently fulfill a battery maintenance role

**PREREQUISITES**
- Employee must have attended Electrical Safety rules course NO. 21200 or any equivalent.
- Employee must have a basic knowledge of the English language equivalent to the standards shown in the Basic English Course E-1 and E-2.

**DURATION**
5 Days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Different type of cells and batteries construction.
- Battery charging
- Calculation of battery capacity and the discharge rate.
- Troubleshooting of various faults and identifying the battery hazardous

**MAX. NO. OF PARTICIPANTS**
15

**LOCATION**
SWCC Training Center - AL-JUBAIL
Rewinding of Electrical Motors

**OBJECTIVE**
At the end of this course, the trainees should know rewire the AC motor especially single phase motor and three-phase induction motor, understand Motor rewinding preparations tools and equipment. Practice Rewinding the single phase, and three-phase motors.

**COURSE DESIGNED FOR**
- Electrical Maintenance Technicians.
- Asst. Electrical Maintenance Technicians
- Employees those who currently fulfill in motor overhauling, rewinding, and maintenance

**PREREQUISITES**
- Employee must have a basic and work on maintenance.
- Employee must have a knowledge of the English language

**DURATION**
5 Days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Main parts of a single phase and three phase motors.
- Procedure for analyzing motor troubles
- Motor rewinding preparations tools and equipment
- Rewinding the single phase motors.
- Rewinding the single phase motors.
- Motor winding connections.
- Motor rewinding troubleshooting and repair.

**MAX. NO. OF PARTICIPANTS**
10

**LOCATION**
SWCC Training Center - AL-JUBAIL
Cable Repair and Jointing

**OBJECTIVE**
At the end of this course, the trainees should know perform the cable testing, cable jointing, and cable terminations, understand Use and care of tools and equipment. Practice testing cable joint, splices, and Soldering of cable terminations.

**COURSE DESIGNED FOR**
- Electrical Maintenance Technician
- Employees those who currently fulfill in cables monitoring role.

**PREREQUISITES**
- Employee must have a basic knowledge of the English language equivalent to the standards shown in the Basic English

**DURATION**
5 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Workshop safety (revision).
- Use and care of tools and equipment.
- Standard non-armored cable.
- Soldering of cable terminations
- Testing cable joint’s and splices.
- High voltage power cables
- Heat-shrinkable joints for high voltage cables

**MAX. NO. OF PARTICIPANTS**
10

**LOCATION**
SWCC Training Center - AL-JUBAIL
Testing and Calibration of Protective Relays

**OBJECTIVE**

At the end of this course, trainees should know different protective relay types, types of testing conducted on relays, relay testing kits, relay testing procedure, and understand protective relays maintenance. Practice various relays testing and perform needed calibration if applicable.

**COURSE DESIGNED FOR**

- Electrical protection Technicians
- Employees those who currently fulfill in electrical protection role.

**PREREQUISITES**

- Employee must be have an experienced of Electrical protection systems.
- Employee must have a basic knowledge of the English language.

**DURATION**

5 days

**LANGUAGE(S) USED**

English & Arabic

**COURSE OUTLINE**

- Introduction relay calibration.
- Protective relay types.
- Types of Testing Relays.
- Relay testing kits.
- Relay testing procedure.
- Practical Relays Testing Applications.
- Protective relays maintenance.

**MAX. NO. OF PARTICIPANTS**

10

**LOCATION**

SWCC Training Center - AL-JUBAIL
Sampling, Testing and Filtration of Oil of Electrical Equipment

**OBJECTIVE**
At the end of this course, the trainee should know the sampling methods, understand the testing and filtration techniques of mineral insulating oil that has been widely used in power equipment like transformers, capacitors, cables, switchgears, and bushings. Practice a dielectric oil test.

**COURSE DESIGNED FOR**
- Electrical Maintenance Technicians.
- Asst. Electrical Maintenance Technicians
- Employees those who currently fulfill transformer oil maintenance role.

**PREREQUISITES**
- Employee must have attended Electrical Safety rules course NO. 21200..
- Employee must have attended testing of electrical equipment level (1) course no 21224

**DURATION**
5 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Insulated oil sampling & properties
- Insulated oil tests
- Insulated oil maintenance
- Oil treating techniques
- Filtration machine types and components
- Oil dehydration procedure
- Oil acidity removal and inhibitor ejection procedure

**MAX. NO. OF PARTICIPANTS**
15

**LOCATION**
SWCC Training Center - AL-JUBAIL
Relays Coordination

**OBJECTIVE**
At the end of this course, trainees should know protection zones, load flow, fault calculations, understand the different between unit and non unit protection systems. Practice relay coordination.

**COURSE DESIGNED FOR**
- Senior Electrical Protection Technicians.
- Switchgear operators
- Employees those who currently fulfill in advanced protection role.

**PREREQUISITES**
- Employee must be having an experienced in electrical protection
- Employee must be attended Testing & Calibration of Protective Relay course (21239)
- Employee must have a basic knowledge of the English language

**DURATION**
5 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Protection Zones
- Load Flow And Fault Calculation
- Unit And Non Unit Protection Systems
- Relays Coordination

**MAX. NO. OF PARTICIPANTS**
10

**LOCATION**
SWCC Training Center - AL-JUBAIL
Testing of Electrical Equipment Level 2

**OBJECTIVE**
At the end of this course, the trainee should know the common testing determine the essential parameters of electrical power equipment, understand the determination methods for zero, positive and negative sequences for synchronous generator, no-load and blocked rotor tests for three phase induction motors. Practice the transformer open and short circuit test, perform the insulation conductivity tests for different electrical equipment.

**COURSE DESIGNED FOR**
- Senior Electrical Technicians
- Electrical Maintenance Technicians.
- Employees those who currently fulfill in distribution transformer, Induction motors, and an alternator maintenance role.

**PREREQUISITES**
- Testing of electrical equipment level 1 (21224)
- Electrical troubleshooting level (1) (21218)

**DURATION**
5 days

**COURSE OUTLINE**
- Open circuit test
- Short circuit test
- Negative phase sequence test
- Power frequency with stand test
- Insulation test
- Conductivity test.

**LANGUAGE(S) USED**
English & Arabic

**MAX. NO. OF PARTICIPANTS**
15

**LOCATION**
SWCC Training Center - AL-JUBAIL
Gas Insulated Switchgear Testing and Maintenance

**OBJECTIVE**
At the end of this course, the trainees should know the medium voltage and high voltage switchgear operations, understand focuses basically on the operation and maintenance of switchgear equipment namely circuit breakers. Practice filtration of SF6 gas.

**COURSE DESIGNED FOR**
- Senior technician
- Electrical technicians whom work in electrical maintenance activities work.

**PREREQUISITES**
- Employee must have attended:
  - Circuit breaker principle 21221
  - Testing of high voltage equipment 21231
  - Electrical troubleshooting level (2) 21323

**DURATION**
5 Days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Survey of different types of circuit breakers
- Description of SF6 circuit breaker:
  a. construction types.
  b. Techniques of Arc quenching
  c. Mechanism systems
  d. SF6 gas characteristics (physical - chemical -advantages - disadvantages - handling technique)
- Description of maintenance & troubleshooting of SF6 CB

**MAX. NO. OF PARTICIPANTS**
15

**LOCATION**
SWCC Training Center - AL-JUBAIL
**Objective**

At the end of this course, the trainee should know the different types of generator protection relays, understand the function of each relay. Practice and install many generator protection schemes as over voltage, over current, restricted ground fault, differential protection, reverse power, rotor earth fault, and loss-of-excitation.

**Course Designed For**

- Electrical Engineers
- Employees those who currently fulfill in Electrical protection
- Employees those have enough experiences in electrical protections

**Prerequisites**

- Employee must be attendance basic of protection course or any equivalent courses in power system protection.

**Duration**

5 days

**Language(s) Used**

English & Arabic

**Course Outline**

- Generator Construction and Operation
- Generator Grounding and Connections
- Fundamental of Protective Relays
- IEEE Generator Protection Scheme
- Stator Phase Fault Protection
- Stator Ground Fault Protection
- Field Ground Fault Protection
- Generator Abnormal Conditions

**Max. No. Of Participants**

8

**Location**

SWCC Training Center - AL-JUBAIL
Transformer Protection Relays

**OBJECTIVE**
At the end of this course, the trainee should know the faults, causes, and effects of transformers, understand the transformer relay protective system. Also, practice a typical power transformer protection scheme.

**COURSE DESIGNED FOR**
- Electrical Engineers
- Employees those who currently fulfill in Transformer maintenance.
- Employees those have enough experiences in electrical protections.

**PREREQUISITES**
- Employee must have a basic knowledge of power and distribution transformer.

**DURATION**
5 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Overview of Transformer Theory and Construction
- Fundamental of Protective Relays
- IEEE Transformer Protection Scheme
- Transformer Magnetizing Inrush and Relay setting.
- Differential Protection of Power Transformer
- Restricted Earth Fault Protection of Power Transformer
- Overcurrent Protection of Power Transformer

**MAX. NO. OF PARTICIPANTS**
8

**LOCATION**
SWCC Training Center - AL-JUBAIL
Selection, Operating and Optimizing The AC Drive Motors

**OBJECTIVE**
At the end of this course, the trainee should know the basic concepts of AC electric motor drives, understand the operations of MOVIDRIVE Software System. Practice the creation of drive solution for a ventilator or pump as well as a variable speed control solution for a drilling machine through using electric motor driver.

**COURSE DESIGNED FOR**
- Electrical Engineers
- Employees those who currently fulfill in Electrical motor drive operation and maintenance.
- Employees those have enough experiences in motor drive operation and maintenance.

**PREREQUISITES**
- Employee must have a knowledge of the English language.
- Employee must have a basic knowledge of Electrical motor drive.

**DURATION**
5 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Fundamentals of Three-phase Drive Engineering
- Speed Adjustment Response of Induction Motor
- AC Motor Drive Constructions, Regulation and Control
- Application for Selection, Operating and Optimizing the AC Drive Motor MOVIDRIVE Software System
  - By Using the “SEW MOVIDRIVE B”:
    - Project 1: Create a drive solution for a ventilator or pump.
    - Project 2: Create a variable speed control solution for a drilling machine.
  - By Using the “Siemens-MICROMASTER” 56150:
    - Project 3: Energy-saving fan drive.
    - Project 4: Conveyor- belt control.

**MAX. NO. OF PARTICIPANTS**
8

**LOCATION**
SWCC Training Center - AL-JUBAIL
Transformers Installation, Testing and Commissioning at Site

**OBJECTIVE**
At the end of this course, the trainees should know the basics of transformer basic, construction and classifications, understand transformer selection, installation, pre-commissioning, commissioning tests and maintenance of distribution and power transformer. In addition to, the trainees should practice some laboratory tests of transformer.

**COURSE DESIGNED FOR**
- Electrical engineers
- Employees those who currently fulfill in Transformer maintenance roles.

**PREREQUISITES**
- Employee must have a knowledge of the English language

**DURATION**
5 Days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Classification of transformers
- Revision over the transformer theory
- Selection of transformer
- Installation of transformer
- Location, site preparation and pre-commissioning
- Transformer commissioning tests as dielectric and special tests
- Maintenance inspections of distribution transformers
- Maintenance of power transformer

**MAX. NO. OF PARTICIPANTS**
15

**LOCATION**
SWCC Training Center - AL-JUBAIL
Automatic Boiler Control

**OBJECTIVE**
At the end of this course, trainees should be able to know Automatic Boiler Control system and the main parts of it and understand the main function of Feed Water Control, Steam Water System, Combustion Air Preheater and the Economizer principle and three elements control system of steam drum.

**COURSE DESIGNED FOR**
- Instrument Maintenance Technicians
- Senior Instrument Maintenance Technicians

**PREREQUISITES**
- Employee must be an Instrument Maintenance Technician
- Employee must have a basic knowledge of the English language equivalent to the standards shown in the Basic English Course No. 31212.
- Employee must attend course: analoge-1 no. 22231& analoge-2 no. 22233 before this course

**DURATION**
5 days

**LANGUAGE(S) USED**
- English & Arabic

**COURSE OUTLINE**
- Introduction to Automatic Boiler Control
- Boiler Components
- Feed Water Control System
- Steam Water System
- Combustion Air Preheater
- Economizer
- Steam Drum Level Control System

**MAX. NO. OF PARTICIPANTS**
15

**LOCATION**
SWCC Training Center - AL-JUBAIL
Programmable Logic Controller (PLC)

**OBJECTIVE**
At the end of this course, trainees should be able to know the main concept of the PLC, understand the essential functions of the PLC and its communication and practice the programming, maintenance and troubleshooting of PLC.

**COURSE DESIGNED FOR**
- Instrument Maintenance Technicians
- Senior Instrument Maintenance Technicians

**PREREQUISITES**
- Trainee must be an experienced Assistant Instrument Maintenance Technician or Instrument Technician
- Trainee Should've attended Courses # 22211 & 22234
- Trainee must have a basic knowledge of the English language equivalent to the standards shown in the Basic English Course No. 31212.

**DURATION**
5 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Introduction to PLC
- Input and Output module
- PLC Programming using Ladder Diagram
- Communication used in PLC
- Maintenance and Troubleshooting of PLC

**MAX. NO. OF PARTICIPANTS**
12

**LOCATION**
SWCC Training Center - AL-JUBAIL
Objective
At the end of this course, trainees should be able to know the main principal of the digital gates, understand the functions of all the gates such as AND, OR, and NOT also the NAND, NOR, and Ex-or, also practice and build up the gates.

Course Designed For
• Electronic Maintenance Technicians

Prerequisites
• Employee must have a basic knowledge of the English language equivalent to the standards shown in the Basic English Course No. 31212.

Duration
3 Days

Language(s) Used
English & Arabic

Course Outline
• Number system.
• The logic of Gates (AND, OR, NOT, NAND, NOR).
• Truth Table & Symbol of Gates.
• Application of the Gates.

Max. No. of Participants
12

Location
SWCC Training Center - AL-JUBAIL
**Reading of Process and Instrument Drawings**

**OBJECTIVE**
At the end of this course, trainees should be able to know the main Scope and definitions of P&ID regarding ISA standard, understand the loop and function identification and how to read industrial drawing and practice the reading of drawing using different types of drawing.

**COURSE DESIGNED FOR**
- Assistant Instrument Maintenance Technicians
- Instrument Maintenance Technicians
- SWCC Instructor

**PREREQUISITES**
- Trainee must be an experienced Assistant Instrument Maintenance Technician or Instrument Technician
- Trainee must have a basic knowledge of the English language equivalent to the standards shown in the Basic English Course No. 31212.

**DURATION**
5 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Scope & Definitions of P & I Drawings.
- Identification of Organizational Systems & Symbols.
- Identification of Loop and Functions
- Process Signals
- Definitions of Piping and Instrument Terminology
- Organizations & Types of Drawings.

**MAX. NO. OF PARTICIPANTS**
15

**LOCATION**
SWCC Training Center - AL-JUBAIL
Introduction to Field Instruments

**OBJECTIVE**
At the end of this course, trainees should be able to know the main concept of industrial instrumentation, understand their functions and purpose of use in different applications and how they maintained.

**COURSE DESIGNED FOR**
- Assistant Instrument Maintenance Technicians
- Instrument Maintenance Technicians

**PREREQUISITES**
- Trainee must be an experienced Assistant Instrument Maintenance Technician
- Trainee must have a basic knowledge of the English language equivalent to the standards shown in the Basic English Course No. 31212

**DURATION**
5 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Introduction to Industrial Instrumentation
- Pressure Devices.
- Level Devices
- Flow Devices
- Temperature Devices

**MAX. NO. OF PARTICIPANTS**
15

**LOCATION**
SWCC Training Center - AL-JUBAIL
Smart Instruments

**OBJECTIVE**
At the end of this course, trainees should be able to know the design of smart transmitter and the differences with conventional transmitter, understand the different protocols used for communication with smart instrument and how they configure and practice the calibration and re-ranging of smart transmitter using HART communicator.

**COURSE DESIGNED FOR**
- Assistant Instrument Maintenance Technicians
- Instrument Maintenance Technicians
- Senior Instrument Maintenance Technicians

**PREREQUISITES**
- Trainee must be an experienced Electronic Instrument Maintenance Technician, or Instrument Maintenance Technician or Telecommunication Technician
- Trainee should've attended Courses # (22211 & 22234 & 22231 & 22233)
- Trainee must have a basic knowledge of the English language equivalent to the standards shown in the Beginner English Course No. 31213

**DURATION**
5 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Design of smart instruments and the difference with conventional transmitter
- Understand the protocols used for smart transmitters
- Understand how to use HART communicator with smart transmitter
- Calibration and re-ranging of smart transmitter

**MAX. NO. OF PARTICIPANTS**
12

**LOCATION**
SWCC Training Center - AL-JUBAIL
Analog Electronics Level I

**OBJECTIVE**
At the end of this course, trainees should be able to know the main principal of the Direct & Alternating Current, understand the functions of the Oscilloscope, Rectifiers R-C Coupling of Amplifiers and Transformer Coupling also practice and build up their circuit in the lab.

**COURSE DESIGNED FOR**
- Assistant Instrument Maintenance Technicians.
- Instrument Maintenance Technicians

**PREREQUISITES**
- Employee must be an experienced Assistant Instrument Maintenance Technician, or Assistant Telecommunication Technician
- Employee must have a basic knowledge of the English language equivalent to the standards shown in the Beginner English Course No. 31213

**DURATION**
3 Days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Direct & Alternating Current
- Oscilloscope
- Rectifiers
- R-C Coupling of Amplifiers
- Transformer Coupling

**MAX. NO. OF PARTICIPANTS**
12

**LOCATION**
SWCC Training Center - AL-JUBAIL
Analog Electronics Level 2

🎯 **OBJECTIVE**
At the end of this course, trainees should be able to know the main principal of the Operational Amplifier, understand the Application of the Operation Amplifier and practice how build up their circuit in the lab, Linear Integrated Circuits and testing.

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Saline Water Conversion Corporation

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Digital Electronics Level 2

**OBJECTIVE**
At the end of this course, trainees should be able to know the main principal of the digital gates and types of IC's, understand the functions of the latches, flip-flop, decoder, and encoder and practice decoder, encoder and counters circuits.

**COURSE DESIGNED FOR**
- Electronic Or Insurement Maintenance Technicians

**PREREQUISITES**
- Trainee must be an experienced Instrument & Electronic Maintenance Technician
- Trainee Should've attended Courses # (22211)
- Trainee must have a basic knowledge of the English language equivalent to the standards shown in the Basic English Course No. 31212.

**DURATION**
3 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Introduction to Logic Gates (AND, OR, NAND, NOR)
- Digital Latches
- Master/Slave Flip-flop
- Counters, Decoders & Encoder
- Shift Registers
- Types of IC’s

**MAX. NO. OF PARTICIPANTS**
12

**LOCATION**
SWCC Training Center - AL-JUBAIL
Control Valve

**OBJECTIVE**
At the end of this course, trainees should be able to know the main parts of control valves, understand the operation principal of control valves, the different responses of control valves and the functions of all accessoris and practice the calibration, bench-set and mantain different types of control valves.

**COURSE DESIGNED FOR**
- SWCC Instructor
- Instrument Maintenance Technicians
- Senior Instrument Maintenance Technicians

**PREREQUISITES**
- Trainee must be an experienced Instrument & Electronic Maintenance Technician
- Trainee Should've attended Courses # (22213)

**DURATION**
5 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Body Valves
- Control Valve Actuators
- Actuator Response
- Valve Failier Mode
- Control Valve Accessories
- Valve Positioners
- Maintenance of Control Valve

**MAX. NO. OF PARTICIPANTS**
12

**LOCATION**
SWCC Training Center - AL-JUBAIL
Process Measurement

**OBJECTIVE**
At the end of this course, trainees should be able to know the terminology and dynamic characteristics of measuring instruments, understand the measurement of pressure, level, flow and temperature and the instruments used for each application and practice the measurement of pressure, level and flow using differential pressure transmitter and using RTD and thermocouple for temperature measurement.

**COURSE DESIGNED FOR**
- Instrument Maintenance Technicians
- Assistant Instrument Maintenance Technicians
- SWCC Instructor

**PREREQUISITES**
- Trainee must be an experienced Assistant Instrument Maintenance Technician or Instrument Technician
- Trainee must have a basic knowledge of the English language equivalent to the standards shown in the Basic English Course No. 31212.
- Trainee should have attended the courses: 22219 & 22215.

**DURATION**
10 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Introduction to Measurement
- Measuring Instruments
- Pressure Measurement
- Flow Measurement
- Level Measurement
- Temperature Measurement

**MAX. NO. OF PARTICIPANTS**
12

**LOCATION**
SWCC Training Center - AL-JUBAIL
**Process Control**

**OBJECTIVE**
At the end of this course, trainees should be able to know the dynamics characteristics of process control systems, understand the feedback and cascade control system and how to troubleshoot the system and practice the tuning and troubleshooting various types of processes.

**COURSE DESIGNED FOR**
- Senior Instrument Maintenance Technicians
- SWCC Instructor

**PREREQUISITES**
- Trainee must be an experienced Instrument Maintenance Technician
- Trainee must have a basic knowledge of the English language equivalent to the standards shown in the Beginner English Course No. 31213
- Trainee should have attended the courses: (22248 or 22212).

**DURATION**
10 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Dynamics of process control systems, open-loop and closed-loop processes, block diagrams, and various types of processes.
- Using three methods of determine the dynamic characteristics of a process.
- Feedback control and its application
- Understand different types of feedback control, such as: on-off, P, PI, and PID control
- Tune different process control
- know the industrial troubleshooting of process control

**MAX. NO. OF PARTICIPANTS**
12

**LOCATION**
SWCC Training Center - AL-JUBAIL
**Process Control for Engineers**

**OBJECTIVE**
At the end of this course, trainees should be able to know the dynamics characteristics of process control systems, understand the feedback, cascade, feedforward, ratio and split-range control system and how to troubleshoot the system and practice the tuning and troubleshooting various types of processes.

**COURSE DESIGNED FOR**
- SWCC Instructor
- Electronic and Instrument Maintenance Engineer

**PREREQUISITES**
- Trainee must be an experienced Instrument Maintenance Engineer
- Trainee must have a basic knowledge of the English language equivalent to the standards shown in the Basic English Course No. 31212.

**DURATION**
10 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Process Characteristics
- determining the dynamic characteristics of a process
- Advanced Control Schemes
- Feedforward Control
- Ratio Control
- Split-range Control

**MAX. NO. OF PARTICIPANTS**
8

**LOCATION**
SWCC Training Center - AL-JUBAIL
Process Measurement for Engineers

**OBJECTIVE**
At the end of this course, trainees should know the devices used to measure pressure, level, flow and temperature and able to select the right device for any problem and modify the process when needed.

**COURSE DESIGNED FOR**
- Electronic and Instrument Maintenance Engineer

**PREREQUISITES**
- Trainee must have a basic knowledge of the English language equivalent to the standards shown in the Basic English Course No. 31212.

**DURATION**
5 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Understand the fluid mechanics related to the measurement of pressure
- Know and practice the pressure measurement using different pressure measurement devices.
- Understand the level measurement Devices
- Implement the differential pressure transmitter for Level measurement
- Understand the Flow measurement Devices
- Flow meter selection
- Know and practice the different types of RTD and their application
- Know and practice the different types of thermocouple and their application

**MAX. NO. OF PARTICIPANTS**
12

**LOCATION**
SWCC Training Center - AL-JUBAIL
Test, Inspecte and Calibrate of HART Instruments

**OBJECTIVE**
At the end of this course, trainees should know the standard used to calibrate HART instrument, understand the procedure for calibrating instrument and apply that procedure.

**COURSE DESIGNED FOR**
- Electronic and Instrument Maintenance Engineer

**PREREQUISITES**
- Trainee must have a basic knowledge of the English language equivalent to the standards shown in the Basic English Course No. 31212.

**DURATION**
5 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Understand the Design of Smart transmitters
- Know the smart transmitter features
- Know the HART Protocol and its features
- Use HART Communicator with different connection
- Understand the differences between smart and conventional transmitter
- Understand and practicing calibration and re-ranging of smart transmitter

**MAX. NO. OF PARTICIPANTS**
12

**LOCATION**
SWCC Training Center - AL-JUBAIL
Valves Classification and Maintenance

**OBJECTIVE**
At the end of this course, trainees should be able to know the design, function, understand operation of valves those commonly use in the plants and practice preventive and corrective maintenance and overhaul.

**COURSE DESIGNED FOR**
- Mechanical Maintenance Technicians
- Assistant Mechanical Maintenance Technicians
- Operation instructor except chemist instructor

**PREREQUISITES**
- Trainee must be an experienced Assistant Mechanical Maintenance Technician & Mechanical Maintenance Technicians
- Trainee must have a basic knowledge of the English language

**DURATION**
5 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Valve Design
- Valve Function
- Valve Operation
- Valve Maintenance
- Replace Valve Packing & Carry out other Routine Maintenance Inspections
- Safety Valves maintenance

**MAX. NO. OF PARTICIPANTS**
15

**LOCATION**
SWCC Training Center - AL-JUBAIL
**Pumps Operation and Maintenance**

**OBJECTIVE**
At the end of this course, trainees should be able to know the design, function and classification, understand operation of pumps those commonly use in the plants and practice preventive and corrective maintenance and overhaul.

**COURSE DESIGNED FOR**
- Senior Mechanical Maintenance Technicians
- Mechanical Maintenance Technicians
- Assistant Mechanical Maintenance Technicians
- Operation instructor except chemist instructor

**PREREQUISITES**
- Trainee must be an experienced Mechanical Maintenance Technician or Assistant Mechanical Maintenance Technician
- Trainee must have a basic knowledge of the English language.

**DURATION**
10 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Introduction & Technology
- Pump Classifications
- Positive Displacement Pump Maintenance (Part List & Function, Disassembly-Inspection-Assembly)
- Centrifugal Pump Maintenance (Part List & Function, Disassembly-Inspection-Assembly) for single, two and multistage pumps
- Troubleshooting

**MAX. NO. OF PARTICIPANTS**
12

**LOCATION**
SWCC Training Center - AL-JUBAIL
# Heat Exchangers Maintenance

## Objective
At the end of this course, trainees should be able to know the design, function and types of heat exchanger, understand and practice preventive and corrective maintenance and overhaul.

## Course Designed For
- Mechanical Maintenance Technicians
- HVAC Technician
- HVAC Senior Technician
- Operation instructor except chemist instructor

## Prerequisites
- Trainee must be an experienced Mechanical Maintenance Technician or Assistant Mechanical Maintenance Technician with diploma or high school.
- Trainee must have a basic knowledge of the English Language

## Duration
5 days

## Language(s) Used
English & Arabic

## Course Outline
- Heat exchangers and how they work
- Turbine condenser & Vacuum equipment.
- Condensate & Feed water heaters and thermal deaerator.
- Maintenance of heat exchangers and condensers.
- Feed water heaters, Condensate coolers and drain cooler maintenance.
- Plate heat exchangers maintenance

## Max. No. Of Participants
15

## Location
SWCC Training Center - AL-JUBAIL
Packing and Seals

**OBJECTIVE**
At the end of the course the trainees will be able to know packing and seals types, understand the purpose of using packing and practice changing packing and troubleshooting.

**COURSE DESIGNED FOR**
- Mechanical Assistant Technicians

**PREREQUISITES**
- Employee must be an experienced Mechanical Maintenance Technician
- Employee must have a basic knowledge of the English language equivalent to the standards shown in the Basic English Course

**DURATION**
3 Days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Introduction
- Gasket replacement
- State the purpose of gaskets
- Purpose and use of packing
- Removing old packing
- Mechanical seal types
- Trouble shooting

**MAX. NO. OF PARTICIPANTS**
15

**LOCATION**
SWCC Training Center - AL-JUBAIL
Bearings and Lubrication

**OBJECTIVE**
At the end of this course, trainees should be able to know the design, function and types of Bearings, understand and practice preventive and corrective maintenance and overhaul.

**COURSE DESIGNED FOR**
- Mechanical Maintenance Technicians
- HVAC Technician
- HVAC Senior Technician
- Electrical Technician
- Electrical Senior Technician

**PREREQUISITES**
- Trainee must be an experienced Mechanical Maintenance Technician or Assistant Mechanical Maintenance Technician
- Trainee must have a basic knowledge of the English language equivalent to the standards shown in the Basic English Course No. 31212.

**DURATION**
3 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Introduction, Terminology
- Friction, Bearing Functions, Types, Load, Lubrication
- Bearing Failures.
- Bearing Removal, Inspection, Clearances Check
- Installation Techniques
- Lubrication Oil System
- Bearing Troubleshooting

**MAX. NO. OF PARTICIPANTS**
15

**LOCATION**
SWCC Training Center - AL-JUBAIL
Steam Turbine Maintenance Level 1

**OBJECTIVE**
At the end of this course, trainees should be able to know the design, function and types of Steam Turbines, understand and practice preventive and corrective maintenance and overhaul.

**COURSE DESIGNED FOR**
- Mechanical Maintenance Technicians
- Assistant Mechanical Technicians
- Operation thermal instructor

**PREREQUISITES**
- Trainee must be an experienced Mechanical Maintenance Technician
- Trainee must have a basic knowledge of the English language.

**DURATION**
10 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Steam turbine Fundamentals.
- Components of steam turbine.
- Turbine valves (control, and main stop valves).
- Turbine lubrication oil system.
- Gland seal system.
- Inspection, and Maintenance of turbine bearings.
- Maintenance of the steam turbine Auxiliary.

**MAX. NO. OF PARTICIPANTS**
15

**LOCATION**
SWCC Training Center - AL-JUBAIL
**Boiler Inspection and Maintenance**

**OBJECTIVE**
At the end of this course, trainees should be able to know the function and types of boilers, understand and practice preventive and corrective maintenance and overhaul.

**COURSE DESIGNED FOR**
- Mechanical Technician
- Assistant Mechanical Maintenance Technicians
- Operation instructor except chemist instructor

**PREREQUISITES**
- Trainee must be an experienced Mechanical Maintenance Technician or Assistant Mechanical Maintenance Technician with diploma.
- Trainee must have a basic knowledge of the English language

**DURATION**
5 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Generating Steam
- Boiler Construction and Design
- Combustion Systems
- Condensate and Feed water Systems
- Boiler Protection

**MAX. NO. OF PARTICIPANTS**
15

**LOCATION**
SWCC Training Center - AL-JUBAIL
Steam Turbine Maintenance level 2

**OBJECTIVE**
At the end of the course the trainees will be able to know the procedure of steam turbine major maintenance and understand how to inspect turbine major parts.

**COURSE DESIGNED FOR**
- Senior Mechanical Technician.
- Mechanical Forman

**PREREQUISITES**
- Employee must have experienced Senior Mechanical Technician & Turbine Overhauling.
- Employee must have a basic knowledge of the English language.

**DURATION**
5 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Disassembly Procedure
- Bolt Heating
- Inspection of parts
- Assembly Procedure
- Rotor clearances check
- Bore setting
- Turbine, Exciter, Stub Shaft Alignment and correction

**MAX. NO. OF PARTICIPANTS**
15

**LOCATION**
SWCC Training Center - AL-JUBAIL
Compressor Maintenance

Objective
At the end of the course the trainees will be able to know the principle and classifications of compressor and understand the maintenance procedure and troubleshooting.

Course Designed For
- Senior Mechanical Technician
- Operation instructor
- HVAC Senior Technician

Prerequisites
- Employee must be an experienced Mechanical Maintenance Technician or Senior Maintenance Technician with diploma or high school.
- Employee must have a basic knowledge of the English language equivalent to the standards shown in the Basic English Course.

Duration
5 days

Language(s) Used
English & Arabic

Course Outline
- Working Principle And Classification Of Plant Compressors
- Cylinder, Related Parts And Care
- Crankcase And Care Of Crankcase Parts.
- Auxiliaries Of Compressor And Care
- Reciprocating Compressor Troubleshooting Guide
- Rotary Screw Compressor And Maintenance
- Rotary Blower And Maintenance

Max. No. Of Participants
15

Location
SWCC Training Center - AL-JUBAIL
**Objective**
At the end of the course, the Technicians will be able to carry out all types of Machine Alignment. At the end of this course, trainees should be able to know function and types of Machine Alignment, understand and practice fixing machine misalignment.

**Course Designed For**
- Mechanical Maintenance Forman.
- Mechanical Senior Technician.
- Mechanical Technician

**Prerequisites**
- Trainee must be an experienced Mechanical Forman or Senior Maintenance Technician with diploma or high school.
- Trainee must have a basic knowledge of the English language.

**Duration**
5 days

**Language(s) Used**
English & Arabic

**Course Outline**
- Alignment Basics
- Rim & Face Method
- Reverse Indicator Method.
- Horizontal machinery alignment (Perform rim & face method).
- Horizontal Machinery Alignment (perform graphic method)
- Horizontal Machinery Alignment (draw cold alignment graphs)

**Max. No. Of Participants**
12

**Location**
SWCC Training Center - AL-JUBAIL
Technical Drawings

**OBJECTIVE**
At the end of this course, trainees should be able to know all of the informations and basics about geometric shapes, binocu lar projections, accurately transfer of the dimensions and reading the drawings, understand all of it's principles and techniques and practice the technical drawings on drawing boards with high precision accuracy.

**COURSE DESIGNED FOR**
- Machinist Technicians
- Mechanical Technician
- Welding Technicians
- Assistant Machinist Technicians

**PREREQUISITES**
- Employee must be an experienced Machinist Technician or Assistant Machinist Technician
- Employee must have a basic knowledge of the English language equivalent to the standards show in the Basic English Course No. 31212

**DURATION**
10 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Technical Information About Shapes Geometric Surface.
- geometric construction.
- lines & dimensioning.
- Draw Isomtric And Views.

**MAX. NO. OF PARTICIPANTS**
8

**LOCATION**
SWCC Training Center - AL-JUBAIL
Lathe Operation

**OBJECTIVE**
At the end of this course, trainees should be able to know all of the informations and basics about the lathe machines, understand all of it's calculations and practice it's operations (external machining, internal machining, cutting tapers and cutting threads) with high precision measurements accuracy.

**COURSE DESIGNED FOR**
- Assistant Machinist Technicians
- Machinist Technicians

**PREREQUISITES**
- Employee must be an experienced Assistant Machinist Technician
- Employee must have Measurement Technology course No. 24209
- Employee must have a basic knowledge of the English language equivalent to the standards show in the Basic English Course No. 31212

**DURATION**
10 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Care Of Lathes & Safety.
- Lathe Accessories.
- Cutting Tool, Cutting Speed & Feeds.
- External, Internal & Alignment Lathe Centers.
- Calculation & Cutting Taper.
- Threads.

**MAX. NO. OF PARTICIPANTS**
8

**LOCATION**
SWCC Training Center - AL-JUBAIL
Milling Operation

**OBJECTIVE**
At the end of this course, trainees should be able to know all of the informations and basics about the milling machines, understand all of it's calculations and practice it's operations both horizontal and vertical (external machining, interna machining, kayways and gears cutting) with high precision measurements accuracy.

**COURSE DESIGNED FOR**
- Assistant Machinist Technicians
- Machinist Technicians

**PREREQUISITES**
- Employee must be an experienced Assistant Machinist Technician
- Employee must have Measurement Technology course No.24209
- Employee must have a basic knowledge of the English language equivalent to the standards show in the Basic English Course No. 31212

**DURATION**
10 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Care And Safety Operating Milling Machines.
- Introduction To Milling Machines.
- Milling Cutters Andcutter Holders.
- Cutting Speed And Feed.
- Horizontal Milling Operation.
- Vertical Milling Operation.
- Indexing.

**MAX. NO. OF PARTICIPANTS**
8

**LOCATION**
SWCC Training Center - AL-JUBAIL
OBJECTIVE
At the end of this course, trainees should be able to know all of the informations and basics about indexing and dividing heads, understand all of it's calculations and principles and practice spur gears cutting with high precision measurements accuracy.

COURSE DESIGNED FOR
• Machinist Technicians

PREREQUISITES
• Employee must have Milling Operation course No.24204
• Employee must have Measurement Technology course No.24209
• Employee must have a basic knowledge of the English language equivalent to the standards shown in the Basic English Course No. 31212.

DURATION
5 days

LANGUAGE(S) USED
English & Arabic

COURSE OUTLINE
• Safety And Gear Cutting Methods.
• Introduction Of Dividing Heads & Indexing.
• Introduction To Spur Gear.
• Spur Gear Calculations.

MAX. NO. OF PARTICIPANTS
6

LOCATION
SWCC Training Center - AL-JUBAIL
Machining Calculations and Applications

**OBJECTIVE**

At the end of this course, trainees should be able to know all of the informations and basics about machining calculations, understand all of it's rules, equations and formulas and practise solving applications and exercises of machining operations.

**COURSE DESIGNED FOR**

- Machinist Technicians
- Assistant Machinist Technicians
- Senior Machinist Technicians

**PREREQUISITES**

- To provide detailed information on the Machining Calculations
- Employee must have a basic knowledge of the English language equivalent to the standards shown in the Basic English Course No. 31212.

**DURATION**

10 days

**LANGUAGE(S) USED**

English & Arabic

**COURSE OUTLINE**

- Fundamental Arithmetical Operation.
- Calculation Thread Cutting And Change Gears.
- Taper Calculation.
- Indexing Calculations.
- Applications.
- Machinens Speed And Feed Calculation.

**MAX. NO. OF PARTICIPANTS**

12

**LOCATION**

SWCC Training Center - AL-JUBAIL
**Internal and External Keyway Cutting**

**OBJECTIVE**
At the end of this course, trainees should be able to know all of the informations and basics about the calculate and cutting internal and external key ways, understand all of it's calculations and principles, and practise internal and external key ways cutting with high precision measurements accuracy.

**COURSE DESIGNED FOR**
- Assistant Machinist Technicians
- Machinist Technicians

**PREREQUISITES**
- Employee must have Shaper Operation course No.24203
- Employee must have Measurement Technology course No.24209
- Employee must have a basic knowledge of the English language equivalent to the standards shown in the Basic English Course No. 31212.

**DURATION**
10 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Types of Keys.
- Key Calculations.
- Cutting Internal And External Keyway.

**Max. No. Of Participants**
6

**Location**
SWCC Training Center - AL-JUBAIL
Measuring Techniques

**OBJECTIVE**
At the end of this course, trainees should be able to know all of the informations, basics about the types of measuring tools with both systems (metric, INCH), understand all of it's calculations and principles and techniques and practice taking and reading measurements by all of the types of measuring tools (vernier caliper, micro meter, dial indicator...etc) with both systems (metric, INCH) with high precision accuracy.

**COURSE DESIGNED FOR**
- Machinist Technicians
- Assistant Machinist Technicians
- Welding Technicians
- Mechanical Technicians
- Scaffolding Technicians
- A/C Technicians

**PREREQUISITES**
- Employee must be an experienced Machinist Technician or Assistant Machinist Technician
- Employee must have a basic knowledge of the English language equivalent to the standards shown in the Basic English Course No. 31212.

**DURATION**
5 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Precision Measuring Tools.
- Measuring Gauges.
- Angular Measurement Tools.
- Comparison Measurement.

**MAX. NO. OF PARTICIPANTS**
12

**LOCATION**
SWCC Training Center - AL-JUBAIL
Cutting Tools and Cutting Fluids

**OBJECTIVE**
At the end of this course, trainees should be able to know all of the provide detailed technical informations and basics about the Cutting Tools and Cutting Fluids, understand all of it's Safety, cutting tool materials, Kind of cutting tool, cutting fluids and practice its grinding and re-dressing of cutting tools.

**COURSE DESIGNED FOR**
- Assist. Machinist Technicians.
- Machinist Technicians.

**PREREQUISITES**
- Employee must be an experienced Machinist Technician or Assistant Machinist Technician.
- Employee must have a basic knowledge of the English language equivalent to the standards shown in the Basic English Course No. 31212.

**DURATION**
5 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Safety and Introduction to Cutting Tool.
- Cutting Tool Materials.
- Twist Drill.
- Carbide Cutting Tools.
- Cutting Fluids.

**MAX. NO. OF PARTICIPANTS**
8

**LOCATION**
SWCC Training Center - AL-JUBAIL
Machinere Technology

**Objective**

At the end of this course, trainees should be able to know all of the informations and basics about Machining and machinability (machining process), Non-conventional machining as lathe, milling, shaper and drilling machines. Understand all of its principles and techniques of machine shop technology, safety in workshop and Material use in machine shop as Metal, alloy and plastic, reading and understanding the technical drawings and practice the Precision measuring tools with high precision accuracy.

**Course Designed For**

- Mechanical Engineers

**Prerequisites**

- Employee must have a basic knowledge of the English language equivalent to the standards shown in the Basic English Course No. 31212.

**Duration**

5 days

**Language(s) Used**

English & Arabic

**Course Outline**

- Fundamentals of cutting: Machining and machinability (machining process), mechanics of chip formation
- Non-conventional machining.
- Machining processes: turning, thread cutting, boring, drilling, milling, shaping.
- Machining Operations and Machine Tools
- Material use in machine shop
- Metal, alloy and plastic
- Precision measuring
- Reading and understanding technical drawing

**Max. No. of Participants**

12

**Location**

SWCC Training Center - AL-JUBAIL
**Oxyacetylene Welding  Square Groove Butt Joints**

**OBJECTIVE**
At the end of this course, trainees should be able to know, and able to developing the levels for oxyacetylene gas welding (square groove weld butt joints) in all positions.

**COURSE DESIGNED FOR**
- Assistant Welding Technicians

**PREREQUISITES**
- Employee must be an experienced Assistant Welding Technician
- Employee must have a basic knowledge of the English language equivalent to the standards shown in the Basic English Course No. 31212.

**DURATION**
10 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Fundamentals of Oxyacetylene Welding.
- Safety & Health of Welders
- Assembly Of Quipments & Preparation For Welding
- Square Groove Weld Butt Joint - Flat Position.
- Square Groove Weld Butt Joint - Vertical Position.
- Square Groove Weld Butt Joint - Overhead Position.
- Square Groove Weld Butt Joint - Horizontal Position.

**MAX. NO. OF PARTICIPANTS**
10

**LOCATION**
SWCC Training Center - AL-JUBAIL
**SMAW Basic**

**OBJECTIVE**
At the end of this course, trainees should be able to know types of welding, fundamentals and equipment of SMAW, understand weld nomenclature, welding positions electrode selection and essentials for proper welding and practice multiple pass fillet welds and square groove open root butt joint in the all position.

**COURSE DESIGNED FOR**
- Assistant Welding Technicians

**PREREQUISITES**
- Trainee must be an experienced Assistant Welding Technician
- Trainee must have a basic knowledge of the English language

**DURATION**
15 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Introduction & Fundamentals of Shielded metal Arc Welding
- Safety and Health of Welders
- Power Source for Welding
- Electrodes Selection.
- Fillet weld tee joint position
- Welding distortion control
- Square Groove Weld Butt joint
- Visual inspection & practical weld test

**MAX. NO. OF PARTICIPANTS**
8

**LOCATION**
SWCC Training Center - AL-JUBAIL
**OBJECTIVE**

At the end of this course, trainees should be able to know five essential welding variables controlled and equipment, understand pipe welding position and how to do a procedure for properly assembling and practice production of high standard single vee groove welds on schedule 40 steel pipe in the 2G fixed position by using E6010 & E7018 electrodes.

**COURSE DESIGNED FOR**

- Welding Technicians & senior welding technician

**PREREQUISITES**

- Trainee must be an experienced Welding Technician
- Trainee must have attended the Course No. 25203
- Trainee must have a basic knowledge of the English language.

**DURATION**

10 days

**LANGUAGE(S) USED**

English & Arabic

**COURSE OUTLINE**

- Introduction to Uphill Pipe Welding
- Safety & Health of Welders
- Preparation and Assembly of Pipe Joint
- Methods of Applying The Root Pass

**MAX. NO. OF PARTICIPANTS**

8

**LOCATION**

SWCC Training Center - AL-JUBAIL
Symbols of Welding

**OBJECTIVE**
At the end of this course, trainees should be able to know how to facilitate communication among designers, estimators, production planners, inspectors and welders, understand the reference line and arrowons, fillet weld symbol Orthographic views Intermittent welds Weld all around and field welds, contour and finishing process and method and groove welding symbols

**COURSE DESIGNED FOR**
- Assistant Welding Technicians, Technicians & Sr. technician

**PREREQUISITES**
- Trainee must be an experienced Welding Technician or Assistant Welding Technician
- Trainee must have a basic knowledge of the English language

**DURATION**
10 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Fillet Welding Symbols
- Plug & Slot Symbols
- Spot, Seam & Stud Welding Symbols
- Groove Welding Symbols
- Surfacing Welds and Flange Welds
- Combination Welding Symbols

**MAX. NO. OF PARTICIPANTS**
10

**LOCATION**
SWCC Training Center - AL-JUBAIL
OBJECTIVE
At the end of this course, trainees should be able to acquire an understanding of the principles, systems of views, lines and symbols, and dimensional data for fit-up and welding, as provided on engineering drawings or blueprints.

COURSE DESIGNED FOR
• Welding Technicians
• Assistant Welding Technicians

PREREQUISITES
• Employee must be an experienced Welding Technician or Assistant Welding Technician
• Employee must have a basic knowledge of the English language equivalent to the standards shown in the Basic English Course No. 31212.
• Employee must have attended the Course No. 25205

DURATION
5 days

LANGUAGE(S) USED
English & Arabic

COURSE OUTLINE
• Mathematics and Metrics
• Review of Welding Symbols, Visualization of Orthographic and Pictorial Drawings

MAX. NO. OF PARTICIPANTS
15

LOCATION
SWCC Training Center - AL-JUBAIL
OBJECTIVE
At the end of this course, trainees should be able to know the types of equipment and application of the gas tungsten arc welding process and characteristics of carbon steel and Stainless steel, understand procedure steps for properly setting up, power source and Adjust Electrode, practice the welding with GTAW process, all positions, welding on thin gauge mild steel and stainless steel.

COURSE DESIGNED FOR
• Assistant Welding Technicians and welding Technicians.

PREREQUISITES
• Trainee must be an experienced Welding Technician
• Trainee must be an experienced for Oxyacetylene welding
• Trainee must have a basic knowledge of the English language

DURATION
10 days

LANGUAGE(S) USED
English & Arabic

COURSE OUTLINE
• Introduction to Gas Tungsten Arc Welding
• Safety & Health of Welders
• Preparation For Welding Start up Equipment and shut-Down
• The Effect of Equipment Adjustments on The Welding Arc
• The Welding Characteristics of Carbon Steel
• Mild Steel Practical Exercises
• The Welding Characteristics of Stainless steel
• Stainless Steel Practical Exercises

MAX. NO. OF PARTICIPANTS
8

LOCATION
SWCC Training Center - AL-JUBAIL
SMAW Advanced Level 1

**OBJECTIVE**

At the end of this course, trainees should be able to know applications and advantages of SMAW, process and metals based on several methods of testing, understand five essentials weld size and weld bead profile to produce welds as required by design, practice fillet welds in the all position on thick material and produce high standard complete penetration single vee groove welds in the all position with backing strip.

**COURSE DESIGNED FOR**

- welding Technicians

**PREREQUISITES**

- Trainee must have a basic knowledge of the English language
- Trainee must have attended the Course No. 25202

**DURATION**

15 days

**LANGUAGE(S) USED**

English & Arabic

**COURSE OUTLINE**

- Introduction to S.M.A.W. advanced -1(Fillet & groove)weld
- Safety & Health of Welders
- Fillet Weld (Lap) Joint all Position.
- guided bend test
- Fillet Weld Visual & Macreoch Test.
- single bevel and vee groove weld butt joint all position
- Metals Identification For Welding.
- single vee groove weld flat position visual &

**MAX. NO. OF PARTICIPANTS**

8

**LOCATION**

SWCC Training Center - AL-JUBAIL
SMAW Pipes Uphill (6G) Position

**OBJECTIVE**
At the end of this course, trainees should be able to develop entry level skills for welder portion of pipe fitter. This involves welding with the SMAW process on mild steel, multipass, using procedures for properly assembling and practice production of high standard single vee groove welds on schedule 60 steel pipe in the 6G fixed position by using E6010 & E7018 covered electrodes.

**COURSE DESIGNED FOR**
- SR. Welding Technicians

**PREREQUISITES**
- Employee must be an experienced Welding Technician
- Employee must have a basic knowledge of the English language.

**DURATION**
10 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Introduction to Uphill Pipe Welding
- Safety & Health of Welders
- Preparation and Assembly of Pipe Joint
- Single Vee Groove Weld Butt Joint - 450 Fixed on Positions-6G
- Single Vee Groove Weld Butt Joint - 450 Fixed on Poitons-6G With Guided Bend Test
- Weld Quality: Reading the puddle
- Single Vee Groove Weld Butt Joint - 450 Fixed on Poitons-6G With Stainless Steel Pipe
- Preparation and Assembly of Pipe Joint With Backing Ring
- Single Vee Groove Weld Butt Joint - 450 Fixed on Poitons-6G With Backing Ring
- How To Read and Apply Pipe Welding Procedures

**MAX. NO. OF PARTICIPANTS**
8

**LOCATION**
SWCC Training Center - AL-JUBAIL
Basic of Welding Inspection

**OBJECTIVE**
At the end of this course, trainees should be able to know and provide detailed information on Welding Inspection.

**COURSE DESIGNED FOR**
- Mechanical Maintenance Engineer
- Welding Foremen

**PREREQUISITES**
- Employee must be an experienced Welding Technician or Assistant Welding Technician
- Employee must have a basic knowledge of the English language equivalent to the standards shown in the Basic English Course No. 31212.

**DURATION**
5 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- The Welding Inspector and Responsibility
- Codes, Standards and Specifications
- Destructive Testing
- Nondestructive Examination Processes
- Weld Base Metal Discontinuities

**MAX. NO. OF PARTICIPANTS**
15

**LOCATION**
SWCC Training Center - AL-JUBAIL
HVAC Materials, Tools and Equipment

**OBJECTIVE**
At the end of this course the trainee will able to distinguish between metals characteristics and understand how to use the proper tools to accomplish his job. Practice use of tools, how to Select the suitable equipment.

**COURSE DESIGNED FOR**
- Assistant A/C Technicians

**PREREQUISITES**
- Trainee must be an Assistant A/C Technicians
- Trainee must have a basic knowledge of the English language

**DURATION**
5 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- HVAC Tools.
- A/C Equipment.
- A/C Materials.

**MAX. NO. OF PARTICIPANTS**
10

**LOCATION**
SWCC Training Center - AL-JUBAIL
HVAC Mechanical Troubleshooting Level 2

**OBJECTIVE**
At the end of this course the trainee will be able to know the troubleshooting and repairing the main components of the refrigeration cycle and the accessories, understand the normal running conditions and practice the techniques of troubleshooting.

**COURSE DESIGNED FOR**
- A/C Maintenance Technicians

**PREREQUISITES**
- Trainee must be an experienced A/C Maintenance Technician
- Trainee must have a basic knowledge of the English language
- He must attend course number (26215)

**DURATION**
10 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Compressor test and replacement.
- Condenser, Evaporator test and replacement.
- Test and replacement valves.
- Accessories test and replacement.
- Refrigeration oil (test, add., replacement).
- Mechanical fault diagnoses.
- Acceptable COP (coefficient of performance).

**MAX. NO. OF PARTICIPANTS**
15

**LOCATION**
SWCC Training Center - AL-JUBAIL
HVAC Control

**OBJECTIVE**
At the end of this course the trainee will be able to know functions of control components based on different principle such as pressure, temperature, current flow, pneumatic and protection, understand how to check, re-adjust and practice how to repair different types of controllers.

**COURSE DESIGNED FOR**
- HVAC Maintenance Technician

**PREREQUISITES**
- Trainee must be an experienced HVAC Maintenance Technician

**DURATION**
10 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Definitions and terms.
- Control devices in Refrigerators and window type.
- Control devices in Split units.
- Control devices in package unit.
- Control devices in Air washers.
- Control devices in air driers.
- Control devices in chillers.
- Control devices in AHU and FCU

**MAX. NO. OF PARTICIPANTS**
15

**LOCATION**
SWCC Training Center - AL-JUBAIL
Air Conditioner Installation

**OBJECTIVE**
At the end of this course the trainee will be able to know the manufacturers recommendations, understand the standards and specification and practice the commissioning on different air conditioning units.

**COURSE DESIGNED FOR**
- Assistant A/C Technicians
- A/C Technicians

**PREREQUISITES**
- Trainee must be an experienced A/C maintenance technician

**DURATION**
10 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Pipe and pipe fitting.
- Duct works.
- Cable and wire sizing.
- Belt and belt drive.
- Standards and specification.
- Installation of window type air conditioner.
- Installation of split unit air conditioner.
- Installation of package unit air conditioner.
- Chillers Installation.

**MAX. NO. OF PARTICIPANTS**
15

**LOCATION**
SWCC Training Center - AL-JUBAIL
Air Conditioning and Refrigeration Systems

**OBJECTIVE**
At the end of this course the trainee will be able to know the principles and the basic of the Refrigeration systems, understand the differences between systems and practice the performance of each system.

**COURSE DESIGNED FOR**
- Assistant A/C Technicians
- A/C Technicians

**PREREQUISITES**
- Trainee must be an experienced A/C Maintenance Technician
- Trainee must be an A/C Technicians
- Trainee must have a basic knowledge of the English language

**DURATION**
5 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Vapor compression cycle.
- Multi-pressure systems.
- Absorption system.
- Evaporative cooling.
- Gas, oil and electric heating system.
- Ejector-compression system

**MAX. NO. OF PARTICIPANTS**
15

**LOCATION**
SWCC Training Center - AL-JUBAIL
HVAC Mechanical Troubleshooting Level 1

**OBJECTIVE**
At the end of this course the trainee will be able to know how to diagnose the common and unexpected faults, understand how to maintain the components of the whole units at a good working condition and practice how to repair it.

**COURSE DESIGNED FOR**
- HVAC Maintenance Technicians

**PREREQUISITES**
- Trainee must be an experienced HVAC Maintenance Technician
- Trainee must be an HVAC Technician
- Trainee must have a basic knowledge of the English language

**DURATION**
10 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Troubleshooting procedure.
- Troubleshooting chart.
- Inspection forms.
- Leak and leak detecting.
- Contamination in the system.
- Evacuation and charging.
- Over and undercharge.

**MAX. NO. OF PARTICIPANTS**
12

**LOCATION**
SWCC Training Center - AL-JUBAIL
HVAC Drawing Reading Level 2

**Objective**
At the end of this course the trainee will be able to know the drawing, tracing and modification schematic and wiring diagrams, understand how units are working and practice how to draw the diagrams.

**Course Designed For**
- A/C Technicians

**Prerequisites**
- Trainee must be an experienced A/C Maintenance Technician
- Trainee must have a basic knowledge of the English language equivalent to the standards shown in the Basic English Course No. 31212. The English language
- Trainee must attend course NO. 26217

**Duration**
5 days

**Language(s) Used**
English & Arabic

**Course Outline**
- Split unit wiring diagrams. (above 5 tons).
- Package unit wiring diagrams.
- Air Washer wiring diagrams.

**Max. No. Of Participants**
15

**Location**
SWCC Training Center - AL-JUBAIL
HVAC Electrical Troubleshooting Level 1

**OBJECTIVE**
At the end of this course the trainee will able to know the troubleshooting techniques and faults diagnoses, understand the repairing and maintenance procedures and practice fault remedy on different types and capacities.

**COURSE DESIGNED FOR**
- A/C Maintenance Technicians

**PREREQUISITES**
- Trainee must be an experienced A/C Maintenance Technician
- Trainee must have a basic knowledge of the English language.

**DURATION**
5 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Window type air conditioners:
  - One and half tons capacity
  - Two tons capacity
  - Two and half tons capacity
- Split unit air conditioners up to five tons capacity
- Package unit air conditioners up to ten tons capacity

**MAX. NO. OF PARTICIPANTS**
12

**LOCATION**
SWCC Training Center - AL-JUBAIL
HVAC Measurements

**OBJECTIVE**
At the end of this course, trainees should be able to know the terminology and dynamic characteristics of measuring instruments, understand the measurement of pressure, level, flow and temperature and measuring noise level and estimate loads.

**COURSE DESIGNED FOR**
- Senior A/C Technician

**PREREQUISITES**
- Employee must be an experienced A/C Maintenance Technician
- Employee must have a basic knowledge of the English language equivalent to the standards shown in the Basic English Course No. 31212.

**DURATION**
10 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Electrical measurements.
- Temperature measurements.
- Pressure measurements (air, water and refrigerant).
- Humidity measurements.
- Flow measurements (air, water).
- Water PH value.
- Noise level.
- Load estimation.

**MAX. NO. OF PARTICIPANTS**
15

**LOCATION**
SWCC Training Center - AL-JUBAIL
### General English Level 1

<table>
<thead>
<tr>
<th><strong>Objective</strong></th>
<th><strong>Language(s) Used</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>At the end of this course trainees should be able to know and understand knowledge of English</td>
<td>English &amp; Arabic</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Course Designed For</strong></th>
<th><strong>Course Outline</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>SWCC Employees</td>
<td>• Introduction to English alphabet</td>
</tr>
<tr>
<td></td>
<td>• Formation of letters</td>
</tr>
<tr>
<td></td>
<td>• Lists of nouns and verbs</td>
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<tr>
<td></td>
<td>• Handwriting</td>
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<table>
<thead>
<tr>
<th><strong>Prerequisites</strong></th>
<th><strong>Max. No. of Participants</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginner in English</td>
<td>22</td>
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</table>

<table>
<thead>
<tr>
<th><strong>Duration</strong></th>
<th><strong>Location</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>10 days</td>
<td>SWCC Training Center - AL-JUBAIL</td>
</tr>
</tbody>
</table>
General English Level 2

**OBJECTIVE**
At the end of this course trainees should be able to know and understand communicate effectively using past simple tense

**COURSE DESIGNED FOR**
- SWCC Employees

**PREREQUISITES**
- At least 70 "Good" on General English Level one 31211

**DURATION**
10 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Compare between past and present events
- Talk about old habits and / past activities
- Use verb to be (was and were)
- Identify past experience.
- Describe people you met, countries and places you visited

**MAX. NO. OF PARTICIPANTS**
22

**LOCATION**
SWCC Training Center - AL-JUBAIL
Technical English Level 1

**Objective**
At the end of this course trainees should be able to know and understand language related to vocational, craft and technical fields

**Course Designed for**
- SWCC Employees

**Prerequisites**
- Beginners

**Duration**
10 days

**Language(s) Used**
English & Arabic

**Course Outline**
- Technical terminology specifically related to vocational fields (trades & crafts)
- Basic Grammar & Structure, building on the language from book 1
- Structured reading comprehension practice
- Guided oral communication activities based on the above-mentioned topics

**Max. No. of Participants**
22

**Location**
SWCC Training Center - AL-JUBAIL
Technical English Level 2

**OBJECTIVE**
At the end of this course trainees should be able to know and understand language related to vocational, craft and technical fields.

**COURSE DESIGNED FOR**
- SWCC Employees

**PREREQUISITES**
- Completed Technical English L1 or completed general English level 1

**DURATION**
10 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Technical terminology specifically related to vocational fields (trades & crafts)
- Basic Grammar & Structure, building on the language from book 1
- Structured reading comprehension practice
- Guided oral communication activities based on the above-mentioned topics

**MAX. NO. OF PARTICIPANTS**
22

**LOCATION**
SWCC Training Center - AL-JUBAIL
Business English Level 1

**Objective**
At the end of this course trainees should be able to know and understand acquire and use English for business

**Course Designed For**
- Mangares, Engineers, Supervisors, Head of departments

**Prerequisites**
- Good command of English language

**Duration**
10 days

**Language(s) Used**
English & Arabic

**Course Outline**
- Teaching Vocabulary and conversation for the following topics:
  - Basic English writing & grammar
  - Business abbreviation and acronyms
  - Meeting
  - Negotiation
  - Presentation
  - Money - Finance

**Max. No. of Participants**
20

**Location**
SWCC Training Center - AL-JUBAIL
**Objective**
At the end of this course trainees should be able to know and understand acquire and use English for business.

**Course Designed For**
- Managers, Engineers, Supervisors, Head of departments.

**Prerequisites**
- 70 “Good” on Business Level One # 31230

**Duration**
10 days

**Language(s) Used**
English & Arabic

**Course Outline**
- Teaching the following skills
- Business abbreviation and acronyms
- Writing business letter
- Writing business e-mail
- Writing resume (C.V.)

**Max. No. of Participants**
20

**Location**
SWCC Training Center - AL-JUBAIL
**English Literacy Level 1**

**OBJECTIVE**
At the end of this course trainees should be able to know and understand English to learners who have basic English or none English.

**COURSE DESIGNED FOR**
- SWCC Employees / other clients

**PREREQUISITES**
- Basic English

**DURATION**
10 days

**LANGUAGE(S) USED**
- English

**COURSE OUTLINE**
- Alphabet/ numbers/ days of the week / months
- Writing reading listening to basic English
- Pronouns/ Preposition/
- Forming sentences/ basic Vocabulary/ personal information

**MAX. NO. OF PARTICIPANTS**
- 20

**LOCATION**
- SWCC Training Center - AL-JUBAIL
# English Literacy Level 2

<table>
<thead>
<tr>
<th><strong>Objective</strong></th>
<th>At the end of this course trainees should be able to know and understand English to learners who have knowledge of basic English.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Course Designed For</strong></td>
<td>• SWCC Employees / other clients</td>
</tr>
<tr>
<td><strong>Prerequisites</strong></td>
<td>• 70 (Good) on Literacy Level one</td>
</tr>
<tr>
<td><strong>Duration</strong></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Language(s) Used</strong></th>
<th>English</th>
</tr>
</thead>
</table>
| **Course Outline** | • Nouns/ forming sentences  
• Writing/reading/listening to different topics  
• Basic Grammar  
• Variety of Vocabulary |
| **Max. No. of Participants** | 20 |
| **Location** | SWCC Training Center - AL-JUBAIL |
Learn How to Learn English

**OBJECTIVE**

By the end of this course, the trainee will be able to:

• Understand his/her need to learn English.
• Determine the most important language skills for him/her.
• Build a language matrix that suits him/her.
• Know the obstacles to proficiency and how to overcome them.
• Diagnose the problems of accuracy and fluency and handle them effectively.
• Learn English and know some essential practices.

**COURSE DESIGNED FOR**

All who wish to learn English.

**PREREQUISITES**

It is preferable to be a beginner or an intermediate level participant who wants to learn English.

**DURATION**

3 days

**LANGUAGE(S) USED**

English & Arabic

**COURSE OUTLINE**

• Learning theories.
• Four steps for achieving language learning.
• What are the causes of delayed proficiency and how to overcome them.
• Language matrix:
• What is the difference between accuracy and fluency and the importance of each of them.
• Certain practices for learning language.
• Two educational cases for research.

**MAX. NO. OF PARTICIPANTS**

22

**LOCATION**

SWCC Training Center - AL-JUBAIL
**OBJECTIVE**
At the end of this course trainees should be able to know and understand aware of the standards of ISO 9001-2015.

**COURSE DESIGNED FOR**
- All SWCC employees.

**PREREQUISITES**
- No prerequisites are required

**DURATION**
3 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- مقدمة حول الجودة وتاريخها
- المبادئ الثمانية للجودة
- فوائد تطبيق الجودة بمفهوم الايزو ل المنظمات
- الهدف من وضح مواصفة الايزو 9001
- متطلبات مواصفة الايزو
- نظام ادارة الجودة والتوثيق
- التزام الإدارة العليا
- دارة الموارد المادية
- دارة الموارد البشرية
- بيئة العمل والسلامة
- تحقيق المنتج أو الخدمة
- القياس والتحسين وتطوير آليات وتطبيق
- عوامل نجاح تطبيق نظام الجودة
- الجديد في مواصفة الايزو 2015-9001
- خطوات الحصول ل شهادة الايزو 9001

**MAX. NO. OF PARTICIPANTS**
25

**LOCATION**
SWCC Training Center - AL-JUBAIL
Organization Excellence Based On EFQM Model

**OBJECTIVE**
At the end of this course trainees should be able to know and understand Organizational excellence based on European quality management model.

**COURSE DESIGNED FOR**
- All SWCC Personnel

**PREREQUISITES**
- Participants must be experienced in handling public relations position in their sections/departments.
- Participants should be well versed in written, spoken and reading English language and also have a good background of interaction in the areas of Personnel and administration management.

**DURATION**
3 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Excellence concepts & fundamentals
- Excellence criteria.
- Importance of organization excellence.
- Practical application of excellence models in Organizations.

**MAX. NO. OF PARTICIPANTS**
25

**LOCATION**
SWCC Training Center - AL-JUBAIL
Decision Making

**Objective**

After the completion of the training program, trainees will be able to make decisions based on patterns and criteria associated with decision-making.

**Course Designed For**

- Senior management in the institution
- Middle management in the institution

**Prerequisites**

- He/she should have administrative knowledge and experience.

**Duration**

5 Days

**Language(s) Used**

English & Arabic

**Course Outline**

- Understanding decision-making patterns
- Assessing personal decision-making criteria
- Identifying clear criteria for decision-making
- Understanding the components of decision-making:
  - Procedure for collecting related information
  - Generating creative alternatives
  - Understanding the importance of decision-making:
    - Importance of decision-making on a personal and professional level
    - Guiding principles for delivering the decision
  - Understanding problem-solving methods:
    - Understanding problems
    - Finding the best solution
    - Identifying decision-making obstacles:
      - Decision-making errors and how to handle them
      - Decision-making obstacles and how to avoid them

**Max. No. of Participants**

20

**Location**

SWCC Training Center - AL-JUBAIL
Influence Skills and Leadership Persuasion 32352

**Objective**

By the end of this course, the trainee will be able to:

- Introduce the concept of dialogue, persuasion, and communication.
- Identify the importance of persuasion and psychological characteristics of the convinced person in the social and professional aspects.
- Extract persuasive methods from the evidence of the Holy Quran and the Sunnah.
- Identify persuasive pitfalls and challenges in the persuasive environment.
- Establish the principles of persuasion success.
- Use the tool of persuasion and its influence.
- Understand the stages of persuasion and metaphor of Monroe.
- Build a persuasive dialogue according to the Monroe's persuasive sequence.

**Course Designed For**

- Leaders.
- Media and public relations staff.
- Marketing, publicity, and advertising personnel.

**Prerequisites**

Having a managerial or administrative experience.

**Duration**

5 days

**Language(s) Used**

English & Arabic

**Course Outline**

- Dialogue and persuasion "Engineering of Life"
- Concepts: Communication / Dialogue / Persuasion / Persuasive Dialogue
- Persuasive techniques.
- Persuasive challenges.
- Cultivation of persuasion (mindset for persuasion).
- Monroe's model of persuasion.
- Persuasive success criteria.

**Max. No. of Participants**

20

**Location**

SWCC Training Center - AL-JUBAIL
Team building and Stress Management

**Objective**

By the end of this course, the participant will be able to:

- **Knowledge of the foundations of team building and strategies for dealing with stress (conscious and subconscious).**
- **Understanding of group work problems.**
- **Practice of building teams and modern strategies for dealing with stress.**

**Course Designed For**

- Leaders and managers

**Prerequisites**

- Must have administrative knowledge and experience.

**Duration**

5 days

**Language(s) Used**

English & Arabic

**Course Outline**

- Introduction to team building
- Foundations of team building
- Team building practice
- Principles of team building
- Phases of team building
- Team identity
- Team development plan
- Stress management

**Max. No. of Participants**

20

**Location**

SWCC Training Center - AL-JUBAIL
Effective Communication

**OBJECTIVE**

BY the end of the course, trainees will be able to:

- Understand the importance of communication.
- Communicate effectively on both personal and professional levels.
- Identify and utilize communication skills.
- Participate in the communication process.
- Recognize and overcome communication barriers.

**COURSE DESIGNED FOR**

- Leaders.
- Employees in the media and public relations.
- Trainers.

**PREREQUISITES**

- Requires administrative knowledge and experience.

**DURATION**

5 days

**LANGUAGE(S) USED**

English & Arabic

**COURSE OUTLINE**

- Introduction to communication: What is communication, how to effectively communicate, communication model (STAR).
- Communication skills: Listening, questioning.
- Communication styles: Visual, verbal, non-verbal, written communication.
- Effective communication in the workplace: Leadership communication skills, employee communication, communication for productivity, communication for team success.
- Communication barriers: Linguistic barriers, psychological or emotional barriers, organizational barriers, personal barriers.

**MAX. NO. OF PARTICIPANTS**

20

**LOCATION**

SWCC Training Center - AL-JUBAIL
**Objective**

By the end of this course, the trainee will be able to:

- Understand personal effectiveness and its requirements and behaviors.
- Understand the concept of personal effectiveness and its principles.
- Practice setting priorities and continuous development.

**Course Designed For**

- Managers and supervisors

**Prerequisites**

- Must have administrative knowledge and experience.

**Duration**

3 days

**Language(s) Used**

English & Arabic

**Course Outline**

- Understanding personal responsibility and its characteristics, principles and the active people.
- Understanding and identifying personal priorities and their implementation.
- Setting priorities and planning for their implementation.
- Communicating with others.
  - Emotional intelligence.
  - Active listening.
  - How to establish mutual beneficial agreements.
  - How to handle conflicts.
- Understanding personal effectiveness obstacles.

**Max. No. Of Participants**

20

**Location**

SWCC Training Center - AL-JUBAIL
ISO 9001:2015 "QUALITY MANAGEMENT"

**OBJECTIVE**
At the end of this course, trainee will be aware of the international standard of quality management "ISO 9001, based on the last version issued in 2015".

**COURSE DESIGNED FOR**
- Supervisors, Chiefs, directors.
- Quality management teams.

**PREREQUISITES**
- Participants should be at management or supervision levels.

**DURATION**
3 days

**LANGUAGE(S) USED**
Arabic

**COURSE OUTLINE**
- Historical introduction to quality.
- Quality concepts & fundamentals.
- ISO9001 requirements:
  - Leadership
  - Planning (resources, competency, Awareness, communication)
  - Resources management, documentation
  - Operations management
  - Performance evaluation
  - Improvements of quality system.
- Success Factors of quality management.
- What’s new in quality?
- step by step ISO 9001 certification

**MAX. NO. OF PARTICIPANTS**
25

**LOCATION**
SWCC-training center +PLANTS
### Applied Training of Trainers (TOT)

#### Objective
The Trainee will be able to:
- Use basics skills for trainers such as: speech fluency, enunciation, tone and volume, voice colouring, pauses and silences, rate of speech, eye contact, facial and hand expressions, posture, movement, confidence, energy and enthusiasm and handling questions.
- Professionally practising ROUND.

#### Course Designed For
- Trainers or Instructors
- Teachers and lectures
- Leaders

#### Prerequisites
- Basic knowledge and experience of trainer skills.

#### Duration
5 days

#### Language(s) Used
English & Arabic

#### Course Outline
- TOT Overview
- Basic Trainer Skills
- ROUND Overview
- Rev Up
- On We Go
- Unstoppable
- Noise Check
- Destination
- ROUND Time Slice.

#### Max. No. Of Participants
20

#### Location
SWCC Training Center - AL-JUBAIL
<table>
<thead>
<tr>
<th>Fire Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OBJECTIVE</strong></td>
</tr>
<tr>
<td>At the end of this course trainees should be able to know and understand fire Protection Equipment and Practice</td>
</tr>
<tr>
<td><strong>COURSE DESIGNED FOR</strong></td>
</tr>
<tr>
<td>• All SWCC Personnel</td>
</tr>
<tr>
<td><strong>PREREQUISITES</strong></td>
</tr>
<tr>
<td>• Employee must have a basic knowledge of the English language equivalent to the standards shown in the Basic English and SWCC uniform</td>
</tr>
<tr>
<td><strong>DURATION</strong></td>
</tr>
<tr>
<td>3 days</td>
</tr>
</tbody>
</table>

| **LANGUAGE(S) USED** |
| English & Arabic |

| **COURSE OUTLINE** |
| • Fire Behavior |
| • Fire Classes |
| • Heat Transfer |
| • Fire Extinguishers |
| • Fire Extinguisher live fire Training / Simulator |
| • Methods of using a fire extinguisher |
| • Methods of installation of fire extinguisher |

| **MAX. NO. OF PARTICIPANTS** |
| 22 |

| **LOCATION** |
| SWCC Training Center - AL-JUBAIL |
CPR and First Aid

**OBJECTIVE**
At the end of this course trainees should be able to know and understand Basic First Aid skills and applications.

**COURSE DESIGNED FOR**
- All SWCC Personnel

**PREREQUISITES**
- Employee must have a basic knowledge of the English language equivalent to the standards shown in the Basic English Course No. 31212. (optional)

**DURATION**
3 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- The Principles of First Aid
- Action at an Emergency
- Handling and Transport of Casualty
- Wounds and Bleeding
- Burns
- Unconsciousness, Asphyxia and Obstructed airway
- C.P.R.

**MAX. NO. OF PARTICIPANTS**
22

**LOCATION**
SWCC Training Center - AL-JUBAIL
**Health and Job Hazards**

**OBJECTIVE**
At the end of this course trainees should be able to know and understand. Mechanism is focused on work assignments as a way to identify risks before they occur and the relationship between the worker and the task and the tools used by the work environment and, after that is the definition of risk uncontrolled must take the necessary steps to reduce them or reduced to an acceptable level of risk.

**COURSE DESIGNED FOR**
- Technical personnel in Laboratories / Security / Maintenance / Operation / Safety and fire / environment /Medical clinic in SWCC

**PREREQUISITES**
- Employee must have a basic knowledge of the English language equivalent to the standards shown in the Basic English and SWCC uniform

**DURATION**
3 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Introduction to OSHA
- Industrial hygiene
- Job hazard analysis (JHA)
- Job Safety analysis (JSA)
- Personal Protective Equipment (PPE)

**MAX. NO. OF PARTICIPANTS**
22

**LOCATION**
SWCC Training Center - AL-JUBAIL
HAZMAT

**OBJECTIVE**
At the end of this course trainees should be able to know and understand Mechanism is focused on work assignments as a way to identify risks before they occur and the relationship between the worker and the task and the tools used by the work environment and, after that is the definition of risk uncontrolled must take the necessary steps to reduce them or reduced to an acceptable level of risk program rich with information and laws that make working in this field has the ability to Altarra dealing with hazardous materials on a familiar level of equipment needed in personnel, equipment, systems, and are supported Alagereat (OSHA 1910.1200) and (NFPA 472)

**COURSE DESIGNED FOR**
- Technical personnel in Laboratories / Security / Maintenance / Operation / Safety and fire / environment /Medical clinic.

**PREREQUISITES**
- Employee must have a basic knowledge of the English language equivalent to the standards shown in the Basic English and SWCC uniform.

**DURATION**
3 days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Identify The Binding Laws Of OSHA& NFPA Employees Who Work In Hazardous Materials
- Material Safety Data Sheet
- Emergency Response Guidebook (ERG)
- Hazmat Zones
- Personal Protective Equipment

**MAX. NO. OF PARTICIPANTS**
22

**LOCATION**
SWCC Training Center - AL-JUBAIL
OBJECTIVE
At the end of this course trainees should be able to know and understand the latest and advanced sources in the field of occupational safety and health in order to achieve a high degree of professionalism in the course of their work to control the risks they may face easily and efficiently.

COURSE DESIGNED FOR
• Engineers, supervisors and formans in operation and maintenance / Safety Specialist, Safety Inspectors and Fire Supervisors in SWCC

PREREQUISITES
• Employee must have a basic knowledge of the English language equivalent to the standards shown in the Basic English .and SWCC uniform

DURATION
5 days

LANGUAGE(S) USED
English & Arabic

COURSE OUTLINE
• Introduction to OSHA
• means of egress
• Welding and Cutting
• Electrical Safety
• OSHA Noise Program
• Confined Space
• Ladders Safety
• Compressed Gas Cylinders
• Scaffolding Safety
• Hazard Communication
• Tools-Hand and Power Safety
• Personal Protective Equipment (PPE)

MAX. NO. OF PARTICIPANTS
20

LOCATION
SWCC Training Center - AL-JUBAIL
Microsoft Word 2016 - Beginners 34345

**OBJECTIVE**
At the end of this course trainees should be able to know and understand the concept of word processing and to Create, Edit, Save, Revise, Polish and Print documents.

**COURSE DESIGNED FOR**
- Employees whose work requires the use of word processor

**PREREQUISITES**
- Employee must have a good command of English language.
- Candidate must have strong background of Microsoft Windows® operating system and its basic operations - such as handling files and folders and interactions with Dialogs and Menus.

**DURATION**
5 Days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Introduction to Word Processing
- Creating New documents, and saving them
- Basic Skills
- Editing Documents
- Revising Documents
- Searching and Replacing
- Character Formatting
- Paragraph Formatting
- Previewing and Printing Documents

**MAX. NO. OF PARTICIPANTS**
20

**LOCATION**
SWCC Training Center - AL-JUBAIL
Microsoft Excel 2016 - Beginners

**OBJECTIVE**
At the end of this course trainees should be able to know and understand the concept of Spreadsheets, Learning the Techniques of Adding & Editing Data, and to represent the data graphically.

**COURSE DESIGNED FOR**
- Accountants, or employees whose work requires the use of spreadsheets.

**PREREQUISITES**
- Employee must have a good command of English language.
- Candidate must have strong background of Microsoft Windows® operating system and its basic operations - such as handling files and folders and interactions with Dialogs and Menus.

**DURATION**
5 Days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Basic Skills & Types of data
- Data Entry
- Operators
- Simple and Important Functions
- Creating and Editing Worksheets
- Formatting Cells
- Creating Charts
- Setting up the Spreadsheet
- Printing the Spreadsheet.

**MAX. NO. OF PARTICIPANTS**
20

**LOCATION**
SWCC Training Center - AL-JUBAIL
## Microsoft PowerPoint 2016 - Beginners

### OBJECTIVE
At the end of this course the trainees will be able to use computers in creating presentations & shows.

### COURSE DESIGNED FOR
- Engineers, Managers, or Employees whose work requires the use of this program in demonstrating ideas.

### PREREQUISITES
- Employee must have a good command of English language.
- Candidate must have strong background of Microsoft Windows® operating system and its basic operations - such as handling files and folders and interactions with Dialogs and Menus.

### DURATION
5 Days

### LANGUAGE(S) USED
English & Arabic

### COURSE OUTLINE
- Introduction to Microsoft PowerPoint 2016
- Creating a PowerPoint 2016 Presentation
- Manipulating Slides within PowerPoint 2016
- Manipulating Text in PowerPoint 2016
- Charts in PowerPoint 2016
- PowerPoint 2016 Slide Shows
- Printing and Proofing in PowerPoint 2016

### MAX. NO. OF PARTICIPANTS
20

### LOCATION
SWCC Training Center - AL-JUBAIL
Microsoft Project 2016 - Beginners

**OBJECTIVE**
At the end of this course the trainees will be able to use computers in Project Planning.

**COURSE DESIGNED FOR**
- Engineers, Project Managers, or Employees whose work requires the use of this Program in planning projects.

**PREREQUISITES**
- Employee must have a good command of English language.
- Candidate must have strong background of Microsoft Windows® operating system and its basic operations - such as handling files and folders and interactions with Dialogs and Menus.
- Candidate must have strong background about project management and its terminologies

**DURATION**
5 Days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Introduction to Microsoft Project 2016
- Tasks and Dependencies
- Resources
- Project Calendars
- Views
- Printing.

**MAX. NO. OF PARTICIPANTS**
20

**LOCATION**
SWCC Training Center - AL-JUBAIL
Microsoft PowerPoint 2016 - Intermediate

**OBJECTIVE**
The main objective of this course is to introduce trainee to some of the more advanced commands, functions, and capabilities of Microsoft PowerPoint.

**COURSE DESIGNED FOR**
- It is designed for users who have used PowerPoint and want to add more advanced elements to their presentations.

**PREREQUISITES**
- Candidate should have Successfully Pass the Course Coded 34347 (Microsoft PowerPoint 2016 Beginners)
- Candidate must have a good command of English language.
- Candidate must have strong background of Microsoft Windows® operating system and its basic operations.

**DURATION**
5 Days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- PowerPoint 2016 Customizing and Compatibility Issues
- PowerPoint 2016 Sections
- PowerPoint 2016 Slide Masters
- PowerPoint 2016 Themes
- Formatting Pictures within PowerPoint 2016
- Manipulating Graphics within PowerPoint
- Formatting AutoShapes in PowerPoint 2016

**Max. No. of Participants**
20

**LOCATION**
SWCC Training Center - AL-JUBAIL
Microsoft Excel 2016 - Intermediate

**OBJECTIVE**
The skills and knowledge acquired in Microsoft Excel 2016 - Intermediate Level enable users to expand their knowledge and learn how to create more productive workbooks. It covers formulas and function techniques, advanced formatting and charting features and data manipulation tools.

**COURSE DESIGNED FOR**
- Accountants, or employees whose work requires the use of spreadsheets.

**PREREQUISITES**
- Candidate should have Successfully Pass the Course Coded 34346 (Microsoft Excel 2016 Beginners)
- Candidate must have a good command of English language.
- Candidate must have strong background of Microsoft Windows® operating system and its basic operations.

**DURATION**
5 Days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Excel 2016 Setup & Printing Issues
- Excel 2016 Functions and Formulas
- Excel 2016 Time & Date Functions
- Excel 2016 Mathematical Functions
- Excel 2016 Logical Functions
- Excel 2016 Statistical Functions
- Excel 2016 Text Functions
- Excel 2016 Lookup Functions
- Excel 2016 Database Functions
- Excel 2016 Named Ranges
- Manipulating Worksheets within Excel 2016

**Max. NO. Of Participants**
20

**LOCATION**
SWCC Training Center - AL-JUBAIL
**OBJECTIVE**
The skills and knowledge acquired in Microsoft Excel 2016 - Advanced Level are sufficient to be able to protect worksheet data, perform advanced data operations using summarizing, data consolidations, filters and PivotTables, macros, and much more.

**COURSE DESIGNED FOR**
- Accountants, or employees whose work requires the use of spreadsheets.

**PREREQUISITES**
- Candidate should have Successfully Pass the Course Coded 34355 (Microsoft Excel 2016 Intermediate)
- Candidate must have a good command of English language.
- Candidate must have strong background of Microsoft Windows® operating system and its basic operations.

**DURATION**
5 Days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Pivot Tables
- Input Tables
- Charts
- Hyperlinks
- Linking & Embedding
- Importing Text Files
- Sorting and Filtering Data
- Tracking and Reviewing Changes
- Scenarios
- Validating
- Auditing
- Macros
- Passwords & Security Issues

**MAX. NO. OF PARTICIPANTS**
20

**LOCATION**
SWCC Training Center - AL-JUBAIL
Microsoft Project 2016 - Advanced

**OBJECTIVE**

At the completion of this course you should be able to:

- use various techniques for levelling over allocation of resources
- assign material resources in a project
- assign and track costs within a project
- apply constraints and deadlines to tasks in a project
- track the progress of a project
- work more productively with project views
- work with tables in Project
- work with some of the features that allow you to control your data
- format projects to make them more appealing and relevant
- print data from Gantt Charts in a variety of ways and presentations

**COURSE DESIGNED FOR**

- designed for existing users of Microsoft Project who wish to extend their skills and knowledge beyond the creation of simple projects

**PREREQUISITES**

- Candidate should have Successfully Pass the Course Coded 34350 (Microsoft Project 2016 Beginners)
- Candidate must have a good command of English language.
- Candidate must have strong background of Microsoft Windows® operating system and its basic operations.

**DURATION**

5 Days

**LANGUAGE(S) USED**

English & Arabic

**COURSE OUTLINE**

- Resource Levelling
- Assigning Materials
- Costs
- Constraints and Deadlines
- Project Tracking
- Project Views
- Tables
- Controlling Project Data
- Formatting Projects
- Advanced Printing

**MAX. NO. OF PARTICIPANTS**

20

**LOCATION**

SWCC Training Center - AL-JUBAIL
AutoCAD 2018 - Beginners

**OBJECTIVE**
At the end of this course the trainee will be able to Draw, Edit, View and Plot any 2D drawing with any given dimensions.

**COURSE DESIGNED FOR**
- Engineers, Draftsmen

**PREREQUISITES**
- Candidate should be an engineer or a Draftsman or attended the Training Center’s Advanced Course Named: “Technical Drawing” and coded “24200”
- Candidate must have a good Command of English language.
- Candidate must have strong background of Microsoft Windows® operating system and its basic operations - such as handling files and folders and interactions with Dialogs and Menus.

**DURATION**
10 Days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Introduction to AutoCAD.
- Draw geometric objects.
- Annotate the drawing.
- Modify existing objects.
- Extract geometric information from objects.
- Control the drawing views.
- Control the properties of objects.
- Setup the drawing views and drawing aids.
- Work with Layers.
- Plot drawings.

**MAX. NO. OF PARTICIPANTS**
15

**LOCATION**
SWCC Training Center - AL-JUBAIL
**AutoCAD 2018 - Advanced**

**OBJECTIVE**
At the end of this course the trainee will be able to:
- Create, Edit, View any 3D drawing with any given dimensions, and visualize them
- Add dimensions to the drawing
- Creating Libraries and Symbols

**COURSE DESIGNED FOR**
- Engineers, Draftsmen

**PREREQUISITES**
- Candidate should have Successfully Passed the Course Coded 34317 (AutoCAD Beginners)
- Candidate should be an engineer or a Draftsman or attended the Training Center’s Advanced Course Named: “Technical Drawing” and coded “24200”
- Candidate must have a good Command of English language.
- Candidate must have strong background of Microsoft Windows® operating system and its basic operations - such as handling files and folders and interactions with Dialogs and Menus.

**DURATION**
10 Days

**LANGUAGE(S) USED**
English & Arabic

**COURSE OUTLINE**
- Quick Review on Beginners Level
- 3D Coordinate system & Point Filters
- WCS and UCS
- Creating 3D by adding thickness and Elevation to 2D objects
- 3D Modelling
- Advanced Editing in 3D Space
- 3D Visualization
- Blocks and Attributes
- Dimensioning

**MAX. NO. OF PARTICIPANTS**
15

**LOCATION**
SWCC Training Center - AL-JUBAIL