



*Training Course:  
Chillers: Operation & Maintenance of Chilled  
Water Systems*

*19 - 23 May 2024  
Cairo (Egypt)  
InterContinental Citystars Cairo*

## Training Course: Chillers: Operation & Maintenance of Chilled Water Systems

Training Course code: EN234602 From: 19 - 23 May 2024 Venue: Cairo (Egypt) - InterContinental Citystars Cairo Training Course Fees: 3900 € Euro

### Introduction

It is imperative that your water-cooling systems operates at maximum efficiency. In this hands-on chilled water systems seminar you will receive the critical information needed to increase your system's reliability.

The chiller is the heart of the refrigeration system which operates best with skilled technicians maintaining it. Gain hands-on practice and knowledge of instruments and test meters. Learn how to collect data and evaluate the chiller operation equipment. Become familiar with approach temperature and to interpret it in terms of the system operation.

### Course Objectives of Operation & Maintenance of Chilled Water Systems

This training is for any person needing a basic seminar in Chilled Water Chiller systems.

Professions that benefit the most include:

- Chilled Water System Operators
- Refrigeration System Operators
- HVAC maintenance and Repair Technicians
- Plant & facility maintenance technicians
- Building engineers
- Building managers & superintendents
- Plant & facility managers
- Environmental health & safety personnel
- Apprentice and experienced HVAC technicians
- Stationary engineers
- Energy management personnel

## What You'll Learn

Participants of the chillers operation and maintenance seminar will learn preventive maintenance and troubleshooting methods to ensure the system is always operating with the most efficiency and cost savings. Receive information on the latest techniques and technology.

Topics covered during this training include:

- Types, design and operation of chillers
- Thermodynamics and heat transfer
- Condensers water-cooled and air-cooled operation and maintenance
- Compression and absorption theory
- Cooling towers – design operation
- Refrigeration prime movers and compressors
- Glycol anti-freeze systems
- Thermal storage systems
- Preventive maintenance and troubleshooting

## Course Outlines of Operation & Maintenance of Chilled Water Systems

### CHILLED WATER SYSTEMS

- Synopsis
- Component overview
- System design
- Associations, codes and standards

### THERMODYNAMICS

- Heat transfer theory
- Heat vs. Temperature

### REFRIGERATION THEORY

- The chilled-water refrigeration cycle
- Compression cycle theory
- Absorption cooling theory

## REFRIGERANTS

- Compression cycle refrigerants
- Absorption-machine refrigerants

## REFRIGERATION PRIME MOVERS

- Compressors
- Absorption machines

## EVAPORATORS & LIQUID COOLERS

- Types of evaporators and liquid coolers
- Evaporator cooler operation
- Maintenance

## CONDENSERS

- Types of condensers
- Air-cooled condensers
- Water-cooled condensers

## METERING expansion DEVICES

- Metering devices
- Economizers

## CONTROLS & CONTROL SYSTEMS

- Controls

## CONTROL SYSTEMS PUMPS

- Pump theory
- Centrifugal pump operation
- Centrifugal pump configurations
- Pump maintenance and troubleshooting

#### PIPING SYSTEMS

- Copper tubing
- Steel pipe
- Valves
- Insulation of chilled water piping

#### CONDITIONED SPACE SYSTEMS

- Psychrometrics
- Air-cooling coils
- Fans
- Air filters

#### CLOSED-LOOP SYSTEM FLUIDS

- Water chemistry basics
- Corrosion inhibition
- Freeze protection using glycol fluids
- Cleaning closed-loop systems

#### HEAT REJECTION SYSTEMS

- Once-through waste-water systems
- Recirculating systems

#### OPEN SYSTEM WATER QUALITY

- Cooling tower water

- Cooling tower water treatment
- Water treatment equipment and systems
- Selection of a water treatment vendor

#### HEAT RECOVERY SYSTEMS

- Heat recovery principles

#### THERMAL STORAGE SYSTEMS

- Thermal storage theory
- Ice storage
- Stratified chilled water storage

## Registration form on the Training Course: Chillers: Operation & Maintenance of Chilled Water Systems

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Complete & Mail or fax to Global Horizon Training Center (GHTC) at the address given below

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### Company Information

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### Person Responsible for Training and Development

Full Name (Mr / Ms / Dr / Eng): .....  
Position: .....  
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Personal E-Mail: .....  
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### Payment Method

- ☐ Please find enclosed a cheque made payable to Global Horizon
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