

Designing High-Performance Healthcare HVAC Systems (MENA)

In the Middle East, healthcare facility owners and managers are incorporating greater sustainable design strategies in facilities than compared to other regions of the world. Although many aspects of healthcare facility design do not differ across countries, however, a growing focus on sustainability is placed in the MENA region based on its extreme climate which is known for limited annual rainfall, hot temperatures, and significant energy needs.

As a result of the sustainability focus in the MENA region, the ASHRAE Global Training Center developed the course *Designing High-Performance Healthcare HVAC Systems (MENA)* to discuss design strategies including energy conservation efficiency, occupant comfort, resource efficiency and effectiveness in healthcare facilities. The course discusses in detail the interactions of key elements of high performance in healthcare, infection control, comfort, reliability, safety, maintenance, energy and sustainability in the MENA region.

Based on the application of ASHRAE/ASHE Standard 170-2017, *Ventilation of Health Care Facilities*, the course details the relationship of infection control and HVAC system design for healthcare facilities. Numerous energy conservation strategies are considered in achieving all the goals of a high-performing hospital. For example, the hardware and controls for setback of temperature and airflow and the relationship to temperature, relative humidity, air exchange, filtration, and pressurization requirements are discussed.

Course Topics:

- What is a High-Performing Hospital?
- Element 1. Infection Control, Comfort, Outcome
- Element 2. Safety
- Element 3. Reliability
- Element 4. Maintenance
- Element 5. Energy
- Element 6. Adaptability
- Components
- Psychrometrics, Sequences and Energy
- OR, Iso, ED, Imaging, SPD Room Design
- Controls Tune-up and Persistent Commissioning (PCx)

Course Objectives:

- Define key elements of a high-performing hospital
- Describe the role of HVAC systems in high performing hospitals
- Detail the role of HVAC systems in infection control
- Discuss engineering designs that can help or hurt achieving high performance