

HVAC and BMCS Controls Fundamentals

Why thinktech?

- We are a dedicated training organization, specializing in technical disciplines and providing training courses in the areas of engineering, networking, Smart Buildings, IoT, digitalization, automation, cybersecurity and related subjects
- We are serving educational, commercial, IT, data centre, retail, financial industries among others
- Our team is available to provide local and tailored customer support
- We offer attractive pricing and corporate discounts

Course description

The HVAC and BMCS Controls Fundamentals course provides the knowledge and skills required for the foundation of the successful careers of the building services industry specialists.

- Designed for end users, facility operators, graduates, mechanical & electrical trades, sales professionals and engineers from different backgrounds
- The course is delivered over 2 days
- The course can be delivered at your location and customised for the needs of your personnel

The course ends with the exam testing the knowledge of HVAC and Controls principals, after passing the exam, the attendee is awarded the course participation certificate.

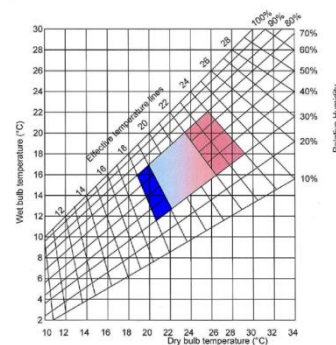
HVAC and BMCS Controls Fundamentals (2-day program)

Day 1

- Why do we need air conditioning?
 - History
 - Current needs and trends
 - Regulations

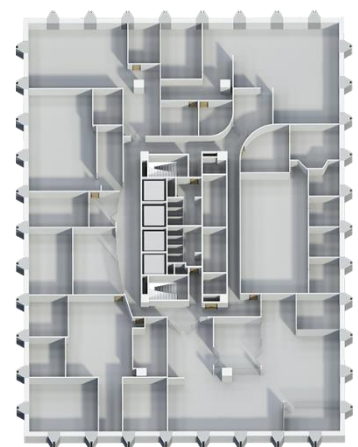


- Comfort factors
 - Human comfort
 - Modern standards
 - Psychrometry
- Cooling and heating loads
 - Sensible and latent heat
 - Gains and losses
 - Components affecting the loads



- Control in buildings
 - What do we control?
 - Industry acronyms
 - Requirements for the modern control system

- Zoning – load variations
 - Zoning standards
 - Zoning design
- Why control is needed?
 - Factors affecting control
 - Control techniques

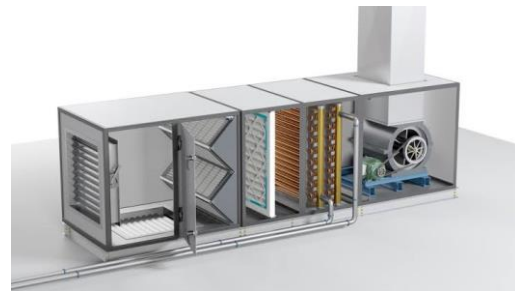


- Operational factors
 - Variables affecting building operation
- Control devices
 - Types of sensors, actuators, drives, etc.
 - Use of right device in right place

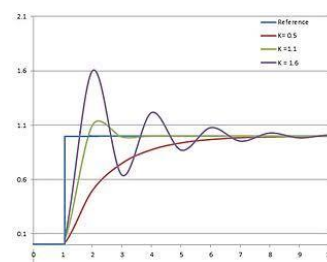


Day 2

- Types of equipment
 - PAC, AHU, FCU, VAV, ACB
 - CHW, CW, HHW plants
 - VRF, VRV systems
- System selection factors
 - CV / VAV
 - CHW / DX
 - Central AHU / Floor by Floor
 - VRV / VRF
 - CB / ACB / Trench heating



- Typical control points
 - Analog and digital signals
 - High level interface options
 - Types of signals
- Control application
 - P, PI, PID control
 - Loop output to thermal effect
- Control algorithms
 - AHU with economy cycle example algorithm
 - VAV control example algorithm



- CW system control example algorithm
- Variations in load control
 - Principals of appropriate control strategy design
 - Examples of correct and incorrect control strategies
- Exam
 - Test assessing the knowledge gained throughout the course

