

HRODC Postgraduate Training Institute

A Postgraduate-Only Institution

127

**Heating Ventilation and Air – Conditioning (HVAC):
System Design and Value Engineering
Course or Seminar**

Leading To:

**DIPLOMA – POSTGRADUATE IN
*Heating Ventilation and Air – Conditioning (HVAC):
System Design and Value Engineering (Quad Credit)*
*Accumulating to***

**POSTGRADUATE DIPLOMA
Progressing To A Masters Degree –
*MBA – MSc - MA***

Course Co-ordinator

Prof. Dr. R. B. Crawford – Director of HRODC Ltd. and Director of HRODC Postgraduate Training Institute, A Postgraduate-Only Institution. He has the following Qualifications and Affiliations:

- Doctor of Philosophy {(PhD) (University of London)};
- MEd. Management (University of Bath);
- Advanced Dip. Science Teacher Ed. (University of Bristol);
- Postgraduate Certificate in Information Systems (University of West London, formerly Thames Valley University);
- Diploma in Doctoral Research Supervision, (University of Wolverhampton);
- Teaching Certificate;
- Fellow of the Institute of Management Specialists;
- Human Resources Specialist, of the Institute of Management Specialists;
- Member of Academy of Management (MAoM), within the following Management Disciplines:
 - Human Resources;
 - Organization and Management Theory;
 - Organization Development and Change;
 - Research Methods;
 - Conflict Management;
 - Organizational Behavior;
 - Management Consulting;
 - Gender & Diversity in Organizations; and
 - Critical Management Studies.
- Member of the Asian Academy of Management (MAAM);
- Member of the International Society of Gesture Studies (MISGS);
- Member of the Standing Council for Organisational Symbolism (MSCOS);
- Life Member of Malaysian Institute of Human Resource Management (LMIHRM);
- Member of ResearchGate Community;
- Member of Convocation, University of London;
- Professor HRODC Postgraduate Training Institute.

Prof. Crawford was an Academic at:

- University of London (UK);

- London South Bank University (UK);
- University of Greenwich (UK); and
- University of Wolverhampton (UK).

For Whom This Course is Designed This Course is Designed For:

- HVAC Technicians;
- HVAC Consultants;
- HVAC Contractors;
- HVAC Designers;
- HVAC Service Supervisors;
- HVAC Assistants;
- HVAC Mechanics;
- HVAC Lecturers;
- Electrical Engineers;
- Mechanical Engineers;
- HVAC Maintenance and Operations Personnel;
- Project Managers;
- Project Engineers;
- Foremen;
- Master Electricians;
- Maintenance Technicians;
- Operation Managers;
- Others who want to gain better understanding of heating, ventilations and air-conditioning system design.

Duration:20 Days

Cost:£20,000.00 Per Delegate

Please Note:

- V.A.T. (Government Tax) does not apply to Corporate Sponsored Individuals, taking Programmes or Courses in any location - within or outside the UK.
- It applies only to Individuals and Corporations based in the UK and to Non-UK Individual Residents taking courses in the UK.

Cost includes:

- Free Continuous snacks throughout the Event Days;
- Free Hot Lunch on Event Days;
- Free City Tour;
- Free Stationery;
- Free On-site Internet Access;
- **Diploma – Postgraduate – in Heating, Ventilation and Air-Conditioning (HVAC):
System Design and Value Engineering (Quad Credit);** or
- Certificate of Attendance and Participation – if unsuccessful on resit.

HRODC Postgraduate Training Institute’s Complimentary Products include:

1. HRODC Postgraduate Training Institute’s **Leather Conference Folder;**
2. HRODC Postgraduate Training Institute’s **Leather Conference Ring Binder/
Writing Pad;**
3. HRODC Postgraduate Training Institute’s **Key Ring/ Chain;**
4. HRODC Postgraduate Training Institute’s **Leather Conference (Computer –
Phone) Bag** – Black or Brown;
5. HRODC Postgraduate Training Institute’s **8GB USB Flash Memory Drive**, with
Course Material;
6. HRODC Postgraduate Training Institute’s **Metal Pen;**
7. HRODC Postgraduate Training Institute’s **Polo Shirt.**

Please see product images, as a separate file - Complimentary Products For Students and Delegates, from HRODC Postgraduate Training Institute.

Daily Schedule:9:30 to 4:30 pm.

Location: **Central London and International Locations**

Heating, Ventilation and Air-Conditioning (HVAC): System Design and Value Engineering

Leading to Diploma-Postgraduate in Heating, Ventilation and Air-Conditioning (HVAC): System Design and Value Engineering (Quad Credit)

Number	Module Title	Credit
127.1	Fundamentals of Heating, Ventilation and Air-Conditioning (HVAC)	Single
127.2	Heating, Ventilation and Air-Conditioning (HVAC): Engineering Design, Procedures , and Air and Temperatures Control	Single
127.3	Heating, Ventilation and Air-Conditioning (HVAC): Engineering Design, Drawing, Specification, Thermodynamics, Psychodynamics, Sound, Vibration and Smoke Management	Double

Module 1

Fundamentals of Heating, Ventilation and Air-Conditioning (HVAC)

Module Objectives

By the conclusion of the specified learning and development activities, delegates will be able to:

- Demonstrate an understanding of the different HVAC equations;
- Solve problems encountered in HVAC process;
- Exhibit an understanding of the relationship between value engineering and HVAC system design;
- Be familiar with the provisions of some codes, regulations and standards governing HVAC;

Module Contents, Concepts and Issues

M.1 Part 1: HVAC Engineering Equations for Daily Use

Frequently Used HVAC Equations:

Infrequently used HVAC Equations:

M.1 Part 2: HVAC Engineering Fundamentals (1)

Problem Solving;
Value Engineering;
Codes, Regulations and Standards;

M.1 Part 3: HVAC Engineering Fundamentals (2)

Comfort;
HVAC Cycles;

M.1 Part 4: Equipment: Cooling

Regeneration Cycles;
Compressors;
Chillers;

M.1 Part 5: Equipment: Heating

General;
Boilers;
Boiler Types;

M.1 Part 6: Equipment: Air-Handling Systems

AHU Systems Arrangements;
Package AHUs;
Built-Up (Field-Assembled) AHU;

Module 2

Heating, Ventilation and Air-Conditioning (HVAC): Engineering Design, Procedures, and Air and Temperature Controls

Module Objectives

By the conclusion of the specified learning and development activities, delegates will be able to:

Make a load calculation design using the computer;
Apply the rule of thumb calculations;
Design criteria and documentation forms;
Enumerate the factors for load components;
Cite the effects of latitude and temperature;

Module Contents, Concepts and Issues

M.2 Part 1: Design Procedures: Load Calculations

Use of Computers;
Rule of Thumb Calculations;
Design Criteria and Documentation Forms;
Factors for Load Components;

M.2 Part 2: Design Procedures: General Concepts for Equipment Selection

Sustainable System and Equipment;
Maintainability of Systems and Equipment;
Criteria for System and Equipment Selection;
Options in System and Equipment Selection;

M.2 Part 3: Design Procedures: Air Handling System

Fans;
Air Duct Design;
Registers and grilles;

M.2 Part 4: Design Procedures: Fluid Handling Systems

Steam;
Water;
High-Temperature Water;
Secondary Coola

M.2 Part 5: Design Procedures: Central Plants

General Plant Design Concept;
Central Steam Plants;
Low-Temperature Hot Water Central Plants;

M.2 Part 6: Design Procedures: Automatic Controls

Control Fundamentals;
Control Devices;

Module 3

Heating, Ventilation and Air-Conditioning (HVAC): Engineering Design, Drawing, Specification, Thermodynamics, Psychodynamics, Sound, Vibration and Smoke Management

Module Objectives

By the conclusion of the specified learning and development activities, delegates will be able to:

Demonstrate an understanding of the fundamentals of electric power;
Explain the common service voltages;
Explain the concept of power factor, using the appropriate examples;
Be familiar with the different types of motors;
Recognise the different variable speed drives;
Be acquainted with the principles of Uninterruptible Power Supply (UPS);

Module Contents, Concepts and Issues

M.3 Part 1: Electrical Features of HVAC Systems

Fundamentals of Electric Power;
Common Service Voltages;
Power Factor;
Motors

M.3 Part 2: Design, Documentations: Drawings and Specification

The Nature of Contracts;
Drawings;
Specifications.

M.3 Part 3: After Design: Through Construction to Operation

Participation during Construction;
Commissioning.

M.3 Part 4: Technical Report Writing

Organization of a Report;
Writing with Clarity;

M.3 Part 5: Engineering Fundamentals: Fluid Mechanics

Terminology in Fluid Mechanics;
Law of Conservation of Mass;
The Bernoulli Equation;
Flow Volume Measurement.

M.3 Part 6: Engineering Fundamentals: Thermodynamics

Thermodynamic Terms;
First law of Thermodynamics;
Second law of Thermodynamics;

M.3 Part 7: Engineering Fundamentals: Heat Transfer

Heat Transfer Modes;
Thermal Conduction;

M.3 Part 8: Engineering Fundamentals: Psychometrics

Thermodynamic Properties of Moist Air;
Tables of Properties;

M.3 Part 9: Engineering Fundamentals: Sound and Vibration

Methods Definitions;
of Specifying and Measuring Sound;

M.3 Part 10: Engineering Fundamentals: Sound and Vibration

Basics of IAQ;
Methods of Providing Acceptable IAQ;

M.3 Part 11: Sustainable HVAC Systems

Energy-Efficient “Green” Buildings;
HVAC Sustainable Design Approaches;
Energy-Efficiency Compliance;

M.3 Part 12: Smoke Management

Basic Statements, Codes, Definitions and Design Guides for Smoke Management
Systems;
Atrium and Mall Smoke Management Design Requirements;

Service Contract, incorporating Terms and Conditions

Click, or copy and paste the URL, below, in your Web Browser, to view our Service Contract, incorporating Terms and Conditions.

https://www.hrodc.com/Service_Contract_Terms_and_Conditions_Service_Details_Delivery_Point_Period_Cancellations_Extinuating_Circumstances_Payment_Protocol_Location.htm

The submission of our application form or otherwise registration by of the submission of a course booking form or e-mail booking request is an attestation of the candidate’s subscription to our Policy Terms and Conditions, which are legally binding.

Prof. Dr. R. B. Crawford - Director HRODC Postgraduate Training Institute