By the end of this program you will be able to:

• Maintain and troubleshoot HVAC systems
• Understand and apply the psychrometric chart
• Design for good air quality
• Perform basic load calculations
• Initiate an effective inspection and maintenance program
• Minimise forced outages and prevent serious damage to HVAC equipment
• Provide an overview of the legislative requirements plus the essential steps and responsibilities for the maintenance and repair of HVAC systems
• Outline the technologies available for the efficient energy management using HVAC systems

PROFESSIONAL CERTIFICATE OF COMPETENCY IN
HEATING, VENTILATION AND AIR-CONDITIONING (HVAC)

12 MODULES OVER 3 MONTHS
For upcoming start dates, please view our program schedule at: http://www.eit.edu.au/schedule

Keep you and your company one step ahead with this comprehensive overview of heating, ventilation and air conditioning system engineering

Bring yourself up to speed in the latest trends and technologies

PROGRAM OBJECTIVES
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Presented by
Hashemi Ford
BE [Honrs][Elec]  ME[Elec]
Principal Engineer

SECURE YOUR PLACE NOW!
Contact enquiries@eit.edu.au for an enrolment form or more information.
PRESENTED BY
HASHEMI FORD
BE [Honrs] (Elec) ME (Elec) Principal Engineer

Hashemi has over 20 years international experience in electrical power industry with a focus on modelling, analysis, planning and operation of power systems including distribution, sub-transmission and transmission networks. He has been involved in modelling and analysis of major projects including HVDC interconnectors and Wind farms. Currently Hashemi is working as a Principal Engineer for a power utility in Australia as well as teaching as a part time lecturer for EIT.

Please note: Lecturers are subject to change.

12 MODULES OVER 3 MONTHS

OVERVIEW

This program is designed for engineers and technicians from a wide range of abilities and backgrounds and will provide an excellent introduction to the fundamentals of heating, ventilation and air-conditioning. It commences with a review of psychrometric charts and then examines the factors that influence design choices, indoor air quality, load calculations and heating/ventilation and air-conditioning systems. Numerous tips and tricks throughout the program make it very practical and topical to your applications.

Includes 4 Free Reference Manuals

Valued at Over US$400

You will receive 4 of our up-to-date technical eBooks to add to your library.

• Fundamentals of Mechanical Engineering
• Practical Corrosion Management
• Pipeline Systems – Design, Construction, Maintenance and Asset Management
• Best Practice Design, Maintenance and Troubleshooting of Conveyors and Chutes

Received upon completion.

All materials required for the program will be provided electronically, in smaller, easy-to-read sections.

Please Note: eBooks are available in hard copy at 50% of the recommended retail price. Contact us for pricing details.
PROGRAM OUTLINE

MODULE 1: INTRODUCTION TO HVAC
- Principles of thermodynamics
- Pressure and temperature relationship
- Fundamentals of heat transfer
- Fundamentals of fluid flow

MODULE 2: PSYCHROMETRY
- Introduction to psychrometry
- The properties of air
- Understanding the psychrometric charts

MODULE 3: REQUIREMENTS OF COMFORT AIR CONDITIONING
- Air purification methods
- Thermodynamics of the human body
- Role of clothing
- Comfort and comfort chart
- Design considerations
- Requirements of temperature and humidity-high heat load industries
- Recommended inside design conditions
- Outside summer design conditions for some foreign cities
- Indoor Air Quality
- Design of ventilation systems

MODULE 4: HEATING & COOLING LOAD CALCULATION PROCEDURE
- Design considerations
- Internal Sensible and Latent Heat Load components
- Design condition - indoor & outdoor conditions
- External Load components
- Miscellaneous heat sources
- Fresh air load

MODULE 5: HVAC SYSTEMS
- Heating systems
- Hot water heating system
- Steam heating systems
- Electric heating systems
- Air-conditioning systems: General
- Air Handling Units
- Functional variations in the design
- Capacity calculation of an air handling unit

MODULE 6: VARIABLE AIR VOLUME (VAV) SYSTEMS
- System concept
- Different VAV systems

MODULE 7: Duct design, air flow and its distribution
- Air flow and pressure losses
- Duct design
- Air distribution system inside space
- Ventilation systems

MODULE 8: Insulation of Air-conditioning systems & Air Conditioning Equipment
- Desired properties of an ideal insulating material
- Factors affecting thermal conductivity
- Types of insulation materials
- Insulated systems
- Importance of relative humidity for the selection of insulation
- Air-conditioning equipment
- Air filters
- Humidifiers
- Dehumidifiers
- Fans and blowers

MODULE 9: Refrigeration
- Methods of refrigeration
- Air refrigeration system
- Vapour compression refrigeration system
- Absorption refrigeration system
- Important refrigerants
- Refrigeration equipment

MODULE 10: Controls and Instrumentation
- Elements of control
- Types of control systems
- Typical control systems

MODULE 11: Installation, Commissioning, Operation, Testing & Maintenance
- Installation
- Charging the refrigeration unit
- Adding oil to the compressor
- Commissioning
- Other service operations
- Maintenance

MODULE 12: Fault finding and troubleshooting & Green House effect & Future Refrigerants
- Troubleshooting
- The greenhouse effect
- History of CFCs
- Ozone depletion by CFCs and the greenhouse effect
- Future refrigerants to replace CFCs

HARDWARE AND SOFTWARE REQUIREMENTS
All you need to participate is an adequate Internet connection, PC, speakers and a microphone. The software package and setup details will be sent to you on the program start date.

ENTRANCE REQUIREMENTS
Some practical work experience in some of these topics would obviously be advantageous.

PRACTICAL EXERCISES
Throughout the program you will participate in hands-on exercises using simulation software or remote labs, which will help you put theory to practice immediately!

CERTIFICATION
Participants completing and achieving at least 50% or more in each assignment, as well as attending 65% of the live webinars, will receive the Engineering Institute of Technology Professional Certificate of Competency in HVAC Engineering.

ON-SITE TRAINING
We can provide our training at the venue of your choice. On-site training can be customised and by bringing the trainer to site the dates can be set to suit you!

“The Customer is Always Right” – so tell us what you need and we will design a training solution at your own site.

For a FREE detailed proposal please contact Kevin Baker via email: training@idc-online.com

HOW WE COVER ALL THIS MATERIAL
There is a considerable amount of useful practical material to cover in this three month program. To ensure you get the maximum value from the program, we provide highly interactive tutorial-lecture sessions where the lecturer covers the key elements of the program in a web and video conferencing format which takes between 45 to 60 minutes with question and answer discussions taking a further 30 minutes. In addition, we provide detailed manuals, software (depending on the topic), Power Point slides, recordings and short videos, which you go through at your convenience. You will then test your knowledge of your learning through a sequence of online quizzes and assignments. Throughout the program you will receive ongoing assistance from your highly experienced lecturer and dedicated learning co-ordinator who are only an email or phone call away.