

COURSE OVERVIEW

Course Title	ESSENTIAL HVAC CONTROL AND OPTIMISATION
Course Aim	Heating, ventilation and air conditioning (HVAC) systems are an essential part of most modern buildings and can consume a large part of any energy used. This course aims to inform participants about the most widely used form of HVAC, their basic control and potential methods for optimising their operation for the least energy use while maintaining the comfort within buildings.
Course Description	This course will describe the basic operation and control of systems such as boilers, air handlers, fan coil units, chillers, pumping systems and air conditioning and relate them to energy consumption. It will then describe potential control methodologies that can be used for optimization such as speed, flow and differential temperature which can be used to optimise their use for lowest energy consumption while maintaining adequate temperatures and comfort levels. This will also include how many of these systems can be controlled via a BMS. It will also cover the implementation and correct use of variable speed drives across the range of HVAC systems. The course will also touch on the renewable versions of some of the HVAC equipment such as biomass boilers and heat pumps.
Course Outcomes	The course will help you to: <ul style="list-style-type: none"> • Understand the operation and energy use of the main types of HVAC • Identify the standard control philosophies which tend to be used for the equipment • Understand potential optimisation methods to reduce energy cost of HVAC and improve its performance • Identify where to install variable speed drives on HVAC and optimize their use • Control through systems such as a BMS • Gain a basic understanding of biomass boiler use and heat pumps
Course Structure and Features	<p>This course is to be delivered as a 1 day workshop.</p> <p>The course structure outlined below is indicative as some sections may be amended to assure the best outcomes for participants. Participants are encouraged to contribute with their own experiences and examples.</p> <p>The course material such as slide pack, case studies and course activities and any other necessary information will be issued by the course tutor at the beginning of the course and throughout.</p> <p>Course Structure:</p> <ol style="list-style-type: none"> 1. Boilers and hot water pumping systems 2. Air handling systems 3. Fan coil units 4. Chilled water systems 5. Air conditioning systems



ENERGY MANAGERS ASSOCIATION

Energy Management Theory Combined with Real World Applications



Who Should Attend the Course	<p>This course is aimed at those who manage energy use in buildings and are exploring heating, ventilation and air conditioning (HVAC) systems and ways to optimise them. This course is aimed also at those who are new to energy management or interested in learning about the use of HVAC systems, their control and optimisation.</p> <p>As a guide, participants with the following job titles may be appropriate for the course:</p> <ul style="list-style-type: none">• Energy trainees• Energy Engineers / Managers• Environmental Engineers / Managers• Sustainability Professionals
Prerequisites	<p>The minimum requirements for admission are:</p> <ul style="list-style-type: none">• Educated to degree standard or equivalent business based energy management experience. Participants should have some familiarity with energy management processes within businesses and have been undertaking energy management activities, ideally for no less than 2 years.• Basic knowledge of energy procurement is assumed (e.g. how energy supply market works, how to read a commercial energy bill)• For those whose first language is not English, and who have not undertaken a course of study where the principal medium of instruction is English, certificate of competency in one of the standard language tests (e.g. IELTS, TOEFL) will normally be required.
Further Information	<p><u>Post course assessment:</u> After the course, participants will be required to complete an assessment to test their knowledge, understanding, and application of the contents covered in this course.</p> <p><u>Certification:</u> Participants who complete and pass the assessment will receive a certificate including 5 hours of Continuing Professional Development (CPD) recognition.</p>
Other Related Training Courses	<p>Energy Assessments, Monitoring, Targeting and Validation Turning Data into Energy Savings Energy Management in Building Services On-site Electricity Generation</p>

