

TECHNICAL ENERGY AUDIT FOR CHILLER PLANT AND IMPROVEMENT SOLUTION



Trainer

Dr. VTR Dharamarajah

Online training: 4 hours x 2 days

Organized by :



UTM SDSN

Recognized by :



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For full claim by company, please check with your HR Department on SBL scheme

Training	Date	CDP	Requirement
Method: Online training Standard Price: RM800/pax	Refer to announcement (Speak with us for confirmed date on brochure)	4* (Full attendance required)	stable internet microphone webcam
Training Summary The goal of this two-day live online technical chiller plant audit course is to provide a broad understanding of chiller plant system and air conditioning efficiency improvement in buildings. Chiller plants are one of the largest consumers of energy inside a building, their performance can have a huge impact on operational costs. For this reason, the efficiency of a chiller plant is often closely monitored for potential improvement. In this course you will learn how to analyze measured data and calculations involved to operate the chiller plant efficiently.		Suitable for - Lecturers teaching building air conditioning. - Students who require detail understanding of building air conditioning. - Consultant working on efficient chiller plant retrofit or optimization. - Energy auditors and energy managers - Facility Managers and engineers interested to learn on how to improve chiller plant efficiency.	
Learning Benefit - Reduction in energy bills from improvement of chiller plant efficiency. - Retrofit and optimization of chiller plant.		Course Outline 1. Chiller Plant Energy Audit 2. Measured Data Analysis 3. Improvement Analysis and Identification of Saving Opportunity 4. Working Principle of Cooling System 5. Cooling Systems Water and Air Side 6. Efficiency Improvement in Chiller Plant 7. Actual Case Studies and Analysis	

Trainer Profile

Dr. VTR Dharamarajah is an established and well known among energy efficiency industry players in Malaysia as a very experienced energy efficiency expert especially in the area of energy auditing and air conditioning systems for commercial buildings and industrial facilities. Dr. Dharma has been working in the HVAC industry and energy efficiency related industries. He possesses more than 26 years of in-depth knowledge and hands-on experiences in energy efficiency business and solutions.

He has vast experience in identifying energy saving potential in buildings and various industrial facilities in countries in Asia and Europe from the development of projects to the implementation until the results achieved and reported. He has involved in hundreds of energy audits and has successfully implemented some energy performance contracting projects as well to save energy costs for his clients.

Dr. Dharamarajah is a Registered Electrical Energy Manager (REEM) with Energy Commission, a Certified Energy Auditor and Accredited Energy Measurement and Verification Professional with Malaysia Association of Energy Service Companies (MAESCO). He is also actively involved in promoting the energy efficiency industry as the Honorary Secretary of MAESCO and a committee member in the Malaysian Association of Registered Electrical Energy Managers (MAREEM).

Currently, he is one of the expert trainers and assessors for the Certified Energy Manager's Training Course by MAESCO which is endorsed by Energy Commission to qualify to become REEMs.

Registration Form

Course Title	
Course Date	

Course Fees : according to brochure
 P.I.C : Mr Axel / Ms Thulasi
 Numbers : +60167167248 / +075536244
 Website : www.optimalsystems.my
 Hours : Sunday - Thursday (9.00am - 5:00pm)

Registration Form email to training@optimalsystems.my

PARTICIPANTS' DETAILS

1.	Name			
	Position		Mobile No.	
	Email address			
2.	Name			
	Position		Mobile No.	
	Email address			
3.	Name			
	Position		Mobile No.	
	Email address			
4.	Name			
	Position		Mobile No.	
	Email address			
5.	Name			
	Position		Mobile No.	
	Email address			

ORGANIZATION DETAILS

Company/Organization			
Address			
Email		Telephone	

Payment / Terms & Conditions

For **confirmation of seat**, you are required to pay in full (for individual/organization) or with LOU agreement (for organization only, T&C applies) within 7 days upon registering. Any cancellation made by trainee 14 days before the training date, the full amount will be non-refundable but transferable. The **Full Payment** can be made payable to:

Name : OPTIMAL SYSTEMS ENGINEERING SDN BHD
 Bank : CIMB Bank
 Account No. : 8007376166
 Email to : account@optimalsystems.my
 cc to : training@optimalsystems.my

Organization Stamp*

TENTATIVE

TECHNICAL ENERGY AUDIT FOR CHILLER PLANT AND IMPROVEMENT SOLUTION

Day 1	
9.00 am - 10.00 am	Chiller Plant Energy Audit 1. Types of Energy Audit 2. How the raw data obtained from energy management system or data loggers
10.00 am - 10.15 am	Tea break
10.15 am - 11.15 pm	Measured Data Analysis 1. Understand utility bills, their charges, rates, and energy apportioning 2. Using raw data to generate different graphs and plots to explain the actual parameters operating profile 3. Analyze and identify energy conservation measures 4. (Potential Saving) in a more logical and holistic approach
11.15 pm - 1.00 pm	Improvement Analysis and Identification of Saving Opportunity 1. Calculation of base load and seasonal usage pattern 2. Working Session on measured data and areas of improvement

Day 2	
9.00 am - 10.00 am	Working Principle of Cooling System 1. Understanding refrigeration cycle 2. Operation of cooling systems in commercial facilities
10.00 am - 10.15 am	Tea break
10.15 am - 11.15 am	Cooling Systems Water and Air Side 1. Operation of cooling systems in commercial facilities 2. Water Side (Chillers, Cooling Tower & Pumps) 3. Airside (AHU, OAHU) 4. Understand how ACMV systems account for 45% of the average energy bill
11.15 am - 12.15 pm	Efficiency Improvement in Chiller Plant 1. Methods on selection of efficient Air Conditioning equipment. 2. How to optimize existing chiller plant. 3. Areas of Improvement in chiller plant.
12.15 pm - 1.00 pm	Actual Case Studies and Analysis 1. Real Case Studies analysis and Improvement. 2. Implementation of actual energy saving projects. 3. Working sessions on chiller plant improvement based on measured data.

This schedule is subjected to minor changes by the Organizer without prior notice.

For the latest training dates: kindly refer to bit.do/optimise-training

For online registration: go to bit.do/training-register

For offline registration: Fill up form and email to training@optimalsystems.my