3 - 5 AUG 2016 | 9:00AM TO 5:00PM | WWW.SEAS.ORG.SG

INTEGRATIVE DESIGN FOR ENERGY EFFICIENCY

(A MODULE UNDER THE SCEM-PROFESSIONAL LEVEL)
**EXAM OPTIONAL FOR NON-SCEM CANDIDATES

COURSE OVERVIEW

This 3-day course examines higher order principles of sustainability, methodologies for improving the design process, and specific techniques for substaintially increasing the efficiency of energy and water-using systems. The curriculum focuses on the integrative design process, applied engineering principles, and proven best practices for utilizing energy and water resources more efficiently across different applications. Opportunities for savings include system optimization, sustainable design, equipment elimination, deployment of energy efficient technologies and techniques, and proven best practices. The course is derived primarily from materials developed by the internationally famous Rocky Mountain Institute and its network of consultants, and is illustrated with numerous case studies.

COURSE OBJECTIVES

Understand the basic principles of the integrative design process, plus a comprehensive and practical approach to increasing the efficiency of energy and water-intensive industries and commerical buildings. Deliver concise, practical, relevant information with the highest possible applicability.

TARGET AUDIENCE

The training is intended for any person who designs, maintains, analyzes or retrofits systems, or who leads and manages technical staff in these areas. It assumes that participants already possess a sound understanding of engineering fundamentals and details.

PDUs TO BE AWARDED TO SCEMs AND PROFESSIONAL ENGINEERS

APPLICABLE FOR PRODUCTIVITY AND INNOVATION CREDIT (PIC)

Organised by: SEAS

Supported by: WDA Singapore Workforce Development Agency

3 - 5 AUGUST 2016
9:00AM - 5:00PM

UWCSEA TAMPINES
1 Tampines St 73, Singapore 528704

Organised by: SEAS

Supported by: WDA singapore workforce development agency

INTEGRATIVE DESIGN FOR ENERGY EFFICIENCY

(A MODULE UNDER THE SCEM - PROFESSIONAL LEVEL)

PROGRAMME OUTLINE

Session 1: Introduction and Problem Statement
- Environmental challenges
- Higher Order Principles

Session 2: Principles and Paradigms of Integrative Design
- Whole systems thinking: principles, priorities and processes
- The right steps in the right order
- Capturing multiple benefits: how to reduce both capital cost and operating cost

Session 3: Management and Finance
- Identifying and overcoming organisational barriers
- Financial strategies

Session 4: The Integrative Design Process
- How IDP differs from the standard design-bid-build process
- How IDP works
- Energy modeling
- Codes and standards

Session 5: Applications: Tools, Techniques & Technologies
- Introduction: 5 circle diagram, kW/ton metric, overcapacity
- Revisit basic engineering principles
- Equipment Elimination & Thermal Integration
- Load reduction: Cooling with systems thinking, Building envelope and windows, Lighting, including task, space, quality, quantity, daylighting, technologies and integrative design
- Motors and Variable Speed Drives
- Optimizing Fluid Transport
- Low face velocity, Cooling
- Efficient coolth generation
- Optimizing chilled water plant
- Dual temperature cooling loops
- Cooling tower optimization
- Refrigerant issues, Commissioning
- Air handling, distribution & ventilation
- Air compressor optimization
- Information strategies: Controls, sensors and metrics
- Clean energy strategies, Water

Session 6: Cases & Conclusions

ABOUT THE TRAINERS

Mr. Huston Eubank is an rchitect who has spent the last 25 years advocating for green building and sustainability. He has served as the "EarthSmart Ambassador" for Portland General Electric, as a principal at Rocky Mountain Institute's Green Development Services, as founding board secretary and executive director of the World Green Building Council. He is currently Director of Consulting and Chief Knowledge Officer for Regenerative Ventures Inc., an associate of The Green Asia Group, and an advisor to Chris Allen + Associates. He has a Bachelor of Architecture degree from Cornell University, is a Fulbright Senior Specialist and a LEED Accredited Professional (LEED AP).

In the opinion of many informed people, **Mr. Lee Eng Lock** is the best efficiency engineer in the world for HVAC, fluid-handling and cleanrooms. His projects worldwise achieve extraordinary efficiency at generally lower capital cost and with superior comfort and uptime. Most of this retrofits are based on meticulously measured savings, so his results are precise, empirical and well documented. His leadership and accomplishment in the energy efficiency field were recognised by the prestigious ACEEE's Champion of Energy Efficiency in Buildings Award for 2012.

RATES

NORMAL FEE	SCEM CANDIDATE FEE	GROUP FEE
S$870.00 (U.P: $963.00)	S$674.10	-

* Fees inclusive of GST
* Registration is confirmed only upon receipt of payment.
* All fees stated are after WDA funding
* SEAS reserves the right to to make changes to the trainer, programme, venue, cancel or reschedule programme if necessary or warranted by circumstances beyond our control
* Payment to SEAS & Address: Please send a crossed cheque to: Sustainable Energy Association of Singapore, 9 Penang Road, #08-02 Park Mall, Singapore 238459

CALL US AT 6337 9886 TO ENQUIRE

REGISTRATION FORM

☐ Yes! I would like to register for this programme ☐ I am unable to attend but please put me on your mailing list

PARTICIPANT'S DETAILS | Number of Delegates | Fees Payable

1	Name (Dr/Mr/Mrs/Ms)		NRIC No	Designation
	HP No	Email		PEB ☐ SCEM ☐
2	Name (Dr/Mr/Mrs/Ms)		NRIC No	Designation
	HP No	Email		PEB ☐ SCEM ☐

ORGANIZATION'S DETAILS

Company Name

Company Address

Contact Name	Tel
Email	Fax