

Heat Transfer for Industrial Professionals (2nd run)



Introduction / Objective

As part of energy conservation, heat recovery and reuse are common practices in the industrial sector. The heat recovery needs to be carried out after a thorough analysis of the waste heat streams. For carrying out or getting involved with such waste heat recovery analysis, a good understanding of the fundamental concepts of heat transfer is very important. Therefore, it is very much imperative to review and refresh the heat transfer concepts in a practical engineering perspective. This two- day course aims to help the industrial professionals to achieve a review of the important heat transfer concepts that will help to sharpen their analytical skill for their day-to-day engineering practice.

Course Outline

- Three Modes of heat transfer
- Conduction heat transfer
- Fourier's law of thermal conduction
- Convection heat transfer
- Newtons law of cooling
- Radiation heat transfer
- Stefan Boltzmann equation for radiation heat transfer
- Thermal resistance
- Convective heat transfer coefficient
- Overall heat transfer coefficient for plane composite walls
- Heat transfer in cylindrical coordinates
- Overall heat transfer coefficient for pipes and tubes
- Dimensionless Numbers
- Waste heat recovery concept
- Commonly used waste heat recovery devices in the industry Heat exchangers
- Types of heat exchangers
- LMTD method for heat exchanger analysis
- NTU – Effectiveness method for heat exchanger analysis Fouling of heat exchangers

Learning Outcome

Upon completion of this course, participant should be able to develop good understanding of:

- Basic heat transfer concepts
- Heat exchanger analysis
- Commonly used heat exchangers in industrial sectors
- Factors affecting the selection of the industrial heat recovery devices
- Energy savings and economic analysis of heat transfer applications

Speaker's Profile



Dr. Jahangeer K. Abdul Halim a registered Professional Engineer (Mechanical) with the Professional Engineer Board Singapore, graduated with a Master of Science (M.Sc.) in Mechanical Engineering from National University of Singapore in 1998. He was awarded a Research Scholarship by the National University of Singapore (NUS) in 1999 to undertake a research project on solar energy and was awarded a Master of Engineering (M.Eng.) degree in 2002. After completing his M.Eng. degree, he continued with research and teaching at NUS and his research on evaporatively-cooled condensers of air-conditioning systems led to the award of a PhD. degree in 2013. Dr Jahangeer is also an NEA certified Independent Energy Efficiency Opportunities Assessor (EEOA,SP).

Course Details

Date: 16 & 17 Apr 2024

Time:

9.00am to 6.00pm - Classroom training

Venue : **IES Academy@Jurong East**

Devan Nair Institute
for Employment and Employability,
80 Jurong East Street 21, #04-10
Singapore 609607

CPD

: 16 PDU (PEB) / 16 PDU (CEng)
16 PDU (SCEM) – All to be confirm

Fees (inclusive of GST):

IES Member: \$599.50
Non-member: \$708.50

Certificate:

Certificate of Attendance will be given to participant with 100% attendance

Contact person:

Jesline Yue, Tel: 6461 1250

One-time replacement is allowed only if written notice is received by us at least 2 weeks before the commencement of the event. However, when an IES member is replaced by a non-member, the participant has to pay the difference in the relevant fees.

Cancellation/Postponement

Changes in Venue, Dates, Time and Speakers for the Events can occur due to unforeseen circumstances. IES reserves the full rights to cancel or postpone the Event under such circumstances without prior reasons. Every effort, however, will be made to inform the participants or contact person of any cancellation or postponement.

Fees will be refunded in FULL if any Event is cancelled by IESA.

PERSONAL DATA PROTECTION ACT

I consent to the processing by Institution of Engineers, Singapore of personal data, including sensitive personal data as defined in the Data Protection Act 2014, about me for the proper purposes of Institution of Engineers, Singapore (IES). I undertake to observe the provisions of the Data Protection Act 2014 in relation to any personal data I may myself hold and process as a Members of Institution of Engineers, Singapore, and I agree to indemnify Institution of Engineers, Singapore from liability for any claims or damages that may arise from the processing of this data. For more information kindly refer to: <https://www.ies.org.sg/Tenant/C0000005/PDF%20file/PDPA/PDPA.pdf>.