

# INDOOR AIR QUALITY ON CONSTRUCTION SITES

## (Virtual Classroom)

**\*\* Supported by UTAP \*\***



### Introduction

Although construction is commonly considered an “outdoor” activity, workers typically spend a significant amount of time at work in “indoor” environments, under roof, carrying out works such as screeding and plastering. This is especially so for residential, commercial, industrial and institutional projects, which was estimated to take up 70% of construction demand in 2017. Within a confined indoor work environment, potential hazards to the workers’ health may arise. We should expect, and take the necessary precautions to ensure, that indoor construction environments are safe workplaces. Indoor air pollutants are typically complex mixtures of low level contaminants, and can comprise physical, chemical and microbiological agents. Being cognizant of the sources of these indoor air quality hazards, the health risks they can pose and ways to safeguard our health is crucial to ensure that our well-being is not compromised in the course of performing our jobs.

### Objectives

The objective of this course is to present an overview of the indoor air quality health hazards that may be encountered by personnel on a construction site environment, addressing questions such as: What are some indoor air contaminants and where do they come from? How do these contaminants get into the body, and what are the health effects they can cause? Finally, what are some measures and good work practices that can be taken to address these indoor air quality concerns?

(The expanded four-hour duration for the course will include discussion of a case study on indoor air)

### Pre-requisites

Prior to attending this course, you should:

- Have a PC / laptop / tablet / smart phone with built-in or external webcam.
- Installed the zoom client.
- Have Wi-Fi / high speed internet connection available.
- Receive an email with a link for you to submit a registration for webinar 1 week prior to the commencement.
- Receive an email with a link and password for you to join the webinar session after your registration is successful.



IES Academy Virtual Classroom

### Details

**Date : 5 NOV 2021**

**Time : 9AM - 1.15PM**

**Duration: 4 Hrs**

**Delivery Mode: Zoom Webinar**

**CPD : 2 STU(Safety) / 4 PDU / 4 SDU**

**Course Fee (Include GST):**

**IES Member: \$102.70**

**Non-member: \$119.80**

E-certificate of Attendance will be awarded to participants who have completed the course survey and assessment.

### Target Audience

- Site Supervisors
- Engineers
- Technical Officers

### **IES Academy@Jurong East**

80 Jurong East Street 21, #04-10

Devan Nair Institute for Employment and Employability  
Singapore 609607

Contact Person: Verline Chiam

DID: 64604241 | Main Line: 6463 9211

E-mail: [verline.chiam@iesnet.org.sg](mailto:verline.chiam@iesnet.org.sg)

## Course Outline

1	Introduction	General principles of indoor air quality Construction sites and the indoor work environment
2	Indoor air quality guidelines in Singapore	
3	Indoor air contaminants on construction sites	Including combustion by-products, volatile organic compounds, particulates, microbial contaminants
4	Exposure to indoor air contaminants	Health effects associated with the exposure to indoor air contaminants
5	Physical agents concerning indoor air quality on construction sites	Including radiation, temperature extremes, ergonomics
6	Good work practices and control strategies	Including source substitution, ventilation, exposure control
7	Case study	Case study on indoor air

## Trainers' Profile



**Dr. Edmund Low** currently lectures at the National University of Singapore, on topics ranging from environmental pollution, workplace health and safety, and data science. He has more than 10 years of research and professional experience spanning the application of computational modelling and engineering principles to address issues in public health, air and water quality. Prior to his current appointment, he was senior engineer at the National Environment Agency, where he was involved in environmental monitoring and assessment programmes in Singapore, including the setting up of the country's first island-wide continuous coastal water quality monitoring system. He has provided advice for formulating control strategies against pollution sources, and has also carried out impact assessment studies of climate and urban land use changes on Singapore catchments. He received his PhD in Environmental Engineering from Yale University.

# Indoor Air Quality On Construction Sites 5<sup>th</sup> Run (Virtual Classroom)

**\*\* Supported by UTAP \*\***

Date: 5 NOV 2021 Time: 9AM - 1.15PM Delivery Mode: Zoom Webinar

Fee (include GST): IES Member: \$102.70 Non-member: \$119.80

Please register online/email the completed form by **26 OCT 2021 before 3PM** to:

Contact Person: Verline Chiam, [verline.chiam@iesnet.org.sg](mailto:verline.chiam@iesnet.org.sg)

IES Academy@Jurong East

80 Jurong East Street 21, #04-10

Devan Nair Institute for Employment and Employability

Singapore 609607 Tel: 64604241

## Participant Details

\*Name : \_\_\_\_\_ \*NRIC : \_\_\_\_\_  
(Please written in BLOCK Letter)

Company : \_\_\_\_\_ \*Designation \_\_\_\_\_

\*Address 1 : \_\_\_\_\_  
(For mailing of invoice and receipt)

\*Postal Code : \_\_\_\_\_ Sex : \_\_\_\_\_ Male / Female \_\_\_\_\_

\*Contact No. : \_\_\_\_\_ Fax : \_\_\_\_\_

\*Your Email : \_\_\_\_\_

(For sending of confirmation email, preferable personal unless company sponsored)

Please indicate: ☐ IES members IES M'ship No.: \_\_\_\_\_ RE/RTO/PE/WSHO No.: \_\_\_\_\_

☐ Non-members

☐ Sponsored by company (Please indicate the Contact person detail)

## Contact Person Details (HR or Finance if sponsored by company or if applicable)

#Name : \_\_\_\_\_ #Designation : \_\_\_\_\_

#Contact No. : \_\_\_\_\_ Fax : \_\_\_\_\_

#Email : \_\_\_\_\_

## Payment Details

Bank / Cheque No : \_\_\_\_\_ Amount (\$): \_\_\_\_\_

~ All Fees are inclusive of 7 % GST.

~ Cheque should be made payable to **"IES ACADEMY PTE LTD"**

## Acceptance of Terms and Conditions for Registrations of IES Academy's Events

I agree to abide by the Terms and Conditions for Registration of IES Academy's Events.

Name : \_\_\_\_\_ Signature : \_\_\_\_\_

**\*Mandatory entry**

**#Compulsory Entry for participant who choose to be INVOICE to your company**

## **TERMS & CONDITIONS COURSE REGISTRATION**

### **Registration**

Any registration, whether on-line or fax will be on a ***first-come-first-served basis*** and will only be confirmed upon receipt of full payment by Engineers Singapore Pte Ltd unless otherwise invoice to company.

All registrations must be submitted with duly completed registration form.

### **Closing Date**

The closing date of the event will be 1 week prior to event commencement date or earlier.

### **Confirmation of Registration**

Confirmation of registration will be given at least 1 week before the commencement date via email. ***If you do not receive the said confirmation email, you are required to contact IESA at 6463 9211 during office hours.***

IESA reserves the right to allow only confirmed registrants to attend the Event.

### **Withdrawals/Refunds of Fees**

Written notice ***at least 1 week in advance*** before the commencement of the event

Full course fee shall be refunded subjected to 4.5% transaction charge.

➤ **NO** refund otherwise.

No show of participant would not be accepted as a valid reason for withdrawal/refund.

One-time replacement is allowed only if written notice is received by us at least 1 week 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.

**UTAP (Union Training Assistance Programme)** is an individual skill upgrading account especially for NTUC members. As a member, you enjoy UTAP funding at 50% of the unfunded course fee capped at \$250 every year.

Please visit [HERE](#) for more information on UTAP claim.

### **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 [here](#).

### **Enquiries**

For further enquiries, please contact IESA general office at Tel: 6463 9211.