



## 性能化消防工程

### Performance-based Fire Engineering

#### 專業提昇 Professional Enhancement

- ♦ Enriches knowledge and competency in the science of performance-based fire engineering.
- ♦ Understanding the basic concept of performance-based fire engineering approach.
- ♦ Familiarize with the performance-based fire engineering design process.
- ♦ Develop the use of appropriate analytical and computational methods in the study offices.
- ♦ 豐富了性能化消防工程科學的知識和能力
- ♦ 了解性能化消防工程方法的基本概念
- ♦ 熟悉性能化消防工程設計流程
- ♦ 在火災研究中使用適當的分析和計算方法

#### 課程簡介 Course Introduction

The objective of this course is to provide an opportunity for engineering professionals who want to learn the basic understanding of fire engineering when designing buildings. This course emphasizes fire in the context of buildings and infrastructure, and the technology for predicting fires and designing against them. Fire engineering approach not only enables higher flexibility in building design but also reduces the life cycle cost of a project. The course will cover the overview of fire engineering, design codes, fire and smoke behavior, human response to fire, structural fire, fire safety management plan and case studies.

本課程的目的是提供和加強工程專業人員在建築設計時正確理解消防工程的基本概念和設計。課程強調建築物和基礎設施在環境中的火災，以及預測火災和設計火災的技術。消防工程方法不僅可以提高建築設計的靈活性，還可以降低項目的生命週期成本。課程將涵蓋消防工程，設計規範，火災和煙霧特性，人類面對火災發生時的反應，結構性火災，消防安全管理計劃和案例研究的基本概念概述。

#### 課程大綱 Course Outlines

1. **Overview of fire engineering** 消防工程概要  
Introduction to fire engineering approach including, fire codes/regulations in designing buildings for Hong Kong, ASET/RSET analysis, tenability criteria, passive and active fire protection systems commonly adopted for fire engineering solutions
2. **Fire and smoke behavior** 火災和煙霧特性  
Introduction to fire and smoke behavior including, ASET, smoke production in fires, stack and wind effect, heat transfer, flashover, smoke control, brief description of zone and field fire modelling (e.g. CFAST, FDS)
3. **Human response to fire** 人類面對火災發生時的反應  
Introduction to fire evacuation including, REST, effect of fire on human body, toxicity, smoke visibility, brief description of evacuation modelling (e.g. SIMULEX, STEPS)
4. **Fire safety management plan** 消防安全管理計劃  
Introduction to fire safety management plan in accordance with the Code of Practice for Fire Safety in Buildings 2011 in Hong Kong including, fire action plan, training plan and maintenance plan
5. **Structural fire** 結構性火災  
Introduction to structural fire engineering including, hand calculations on structural steel temperatures
6. **Case studies** 個案分析  
Various case studies will be presented

## 教學對象 Target Audience

Fire / Building Services / Civil / Structure Engineers, Architects, Surveyors, Town Planners, Contractors

## 授課語言 Medium of Instruction

以廣東話講授，筆記以英文為主 Delivered in Cantonese with notes mainly in English

## 報名地點 Venue for Enrollment

澳門氹仔偉龍馬路澳門科技大學 O 座 6 樓 博雅學院

SLA, 6/F Block O, Macau University of Science and Technology, Avenida Wai Long, Taipa, Macau

## 上課地點 Venue for Class

澳門氹仔偉龍馬路澳門科技大學（確實地點將於確認開課時以手機短訊通知）

Macau University of Science and Technology, Avenida Wai Long, Taipa, Macau

## 上課日期 Course Date & Time

課程編號 Course code : S220700011	24 Sep & 8 Oct 2022	週六 Sat 10:00-13:00 14:00-17:00	總課時 12 小時 Total 12 hours
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**\*課程導師將以 Zoom 形式教學**

課程費用 Tuition Fee MOP2,400

收生名額 Class Size 40

## \* 報名注意事項 Enrollment Notes \*

報名時間：星期一至五(9:00 – 13:00; 14:30 – 20:00) [公眾假期除外]

Operation hours: Monday to Friday (9:00 – 13:00; 14:30 – 20:00) ; [Close at Public Holidays]

1. 首次報讀本院短期課程者，請先登入網上報名系統（網址：<https://scs.must.edu.mo/oasc/PersonalInfo.do>）或掃描以下的 QR Code，選擇 **<工程學和工程行業>** 類別，預先登記個人資料（不需上傳身份證），填妥資料後，待學院短訊通知後至本院辦理報名。

For those who enroll for our courses for the first time, please go to <https://scs.must.edu.mo/oasc/PersonalInfo.do> or scan the QR Code below, choose the category of **<Engineering>**, and input personal information (no need to upload ID copy). After registration online successfully, please come to our school to make payment after our school's SMS notification

2. 所有費用一經繳交，恕不退還（本院取消開辦該課程除外）或轉讓。

All payment made is not refundable (except that the course is cancelled by the School) or transferable.

3. 如課程報名人數不足，本院保留課程取消或延期的權利。

The School reserves the right to cancel or postpone the courses if minimum class size is not reached.



## 查詢 Enquiries

Tel: 8796 1998/ 8796 1999 Email: [sla@must.edu.mo](mailto:sla@must.edu.mo)

Website: <http://www.must.edu.mo/scs/diploma-certificate-programs>

博雅學院致力開拓終身學習機會，如欲收到本學院之課程資料，可發電郵至 [sla@must.edu.mo](mailto:sla@must.edu.mo)，並提供閣下之電郵地址，標題主旨為“加入通知群組”。

The School of Liberal Arts develops life-long learning opportunities. Should you wish to receive information on our programs / courses, please send us an email (to [sla@must.edu.mo](mailto:sla@must.edu.mo)) stating your email address in your email and “Join the mailing list” in the Subject line.

我們亦為機構/政府部門/學校等提供內部培訓，按各機構不同之要求(主題/時間/地點/對象)而訂定培訓內容。請與我們聯絡。

We also offer in-house training for corporations/Government Departments/schools, tailor-made with respect to your choices of topics, time, place, and group of attendees. Please contact us for more information.