

Master of Science (MSc) in Fire Safety Engineering

消防安全工程理學碩士
Postgraduate Programme

2-year Part-time Year 2022 18th Intake

Programme Code: 223-29190

www.cityu.edu.hk/ce/fire



This is an exempted programme under the Non-local Higher and Professional Education (Regulation) Ordinance (ref. number:451312). It is a matter of discretion for individual employers to recognize any qualification to which this programme may lead.



Leading the way in modern learning

The University of Central Lancashire (UCLan) is an international, multi-campus University tracing its roots back to 1828 and leading the way in modern learning today. The main campus is based in Preston in UK. UCLan always believes in helping all to seize every opportunity to flourish in education, at work and for life and is innovative by nature, offering more choices and creating more possibilities. Combining academic excellence and real-world teaching, the University gives people the skills and experience that the industry needs (<https://youtu.be/l1dyIH8zOnU>)

The University of Lancashire (UCLan) is now one of the UK's largest universities with a staff and student community approaching 38,000. Its employment-focused course portfolio with over 350 undergraduate programmes, nearly more than 200 postgraduate courses and rich array of CPD courses means that the University offer students the skills and experience that industry needs.

Building on last year's impressive rise of 27 places, UCLan has climbed a further 5 places in the Complete University Guide 2021 and are now ranked 70th out of 130 institutions. And UCLan has been ranked first for the money invested into student wellbeing services according to the 2020 Student Welfare League Table. UCLan has been awarded Silver in the UK Government's 2017 Teaching Excellence Framework (TEF).

Why Fire Engineering?

Fire Engineering is the science of formulating fire safety solutions or mitigating measures for modern buildings or structures based on quantifying hazards, assessing risks and gauging human response. This "fire engineering approach" is now widely adopted in world-class cities for complex and voluminous buildings; and allows greater flexibility in designs, choice of materials, and more cost-effective solutions without compromising the primary goal of life safety.

Apart from the building safety design using the traditional prescriptive codes, this programme will also emphasis on performance-based design with an aim to prepare students to meet the need of the industry.

Achievements :

- The UCLan community is made up of students from more than 100 countries around the world. And UCLan is partnered with 123 institutions across the globe making UCLan a truly international University.
- In 2021-22, the Center for World University Rankings (CWUR) placed UCLan in the top 7% of universities worldwide.

MSc in Fire Safety Engineering

This broad-based programme, which is equivalent to one year's full-time study, is intended for holders of Bachelor's degree in Fire Engineering or other related disciplines with an aim to provide an integrated programme of broadening of studies in a quality environment.

The level of education provided by the programme is appropriate to those students who hold senior positions within the fire-related professions. Throughout the programme, emphasis will be placed on self-motivation, independent and critical thinking, and analytical ability.

Professional Recognition

The MSc Fire Safety Engineering of UCLan is accredited by the Energy Institute (EI) on behalf of the Engineering Council as further learning for the academic requirement for registration as a Chartered Engineer.



The BEng (Hons) in Fire Engineering of UCLan PLUS MSc in Fire Safety Engineering of UCLan are accredited by the Energy Institute (EI) on behalf of the Engineering Council (EC) for the purposes of fully meeting the academic requirement for registration as a Chartered Engineer.

Graduates of BEng (Hons) in Fire Engineering PLUS MSc in Fire Safety Engineering awarded by UCLan can fulfill the academic requirement for the Hong Kong Institution of Engineers (HKIE) membership in fire discipline was accredited and will conduct reaccreditation process.

UK programmes have been re-accredited by Energy Institute in UK and Hong Kong programmes are waiting for the Energy Institute's re-accreditation visit.

Unique features

- Provides a pathway to students to become a professional engineer through part-time study
- Strong links with industry and professional bodies
- Access to CityU's library, Computing Services Centre and CityU SCOPE Resources Centre with dedicated collections on fire engineering.

Who Should Apply?

- Fire Safety Consultants
- Fire Protection Engineers
- Fire Testing Professionals
- Fire Engineering Practitioners
- Building Services Engineering Practitioners
- Fire Services Members
- Industrial Loss Prevention Officers
- Interested Students

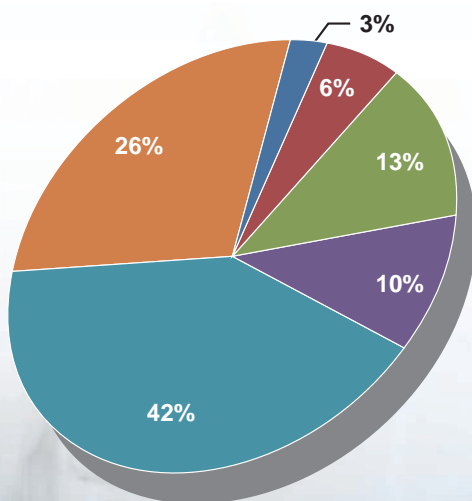
Admission Requirements

Holders of Bachelor's degree in Fire Engineering, Building Engineering, or other related disciplines. Applicants whose undergraduate qualifications were not taught and assessed in English may be required to demonstrate their English proficiency equivalent to IELTS 6.5.

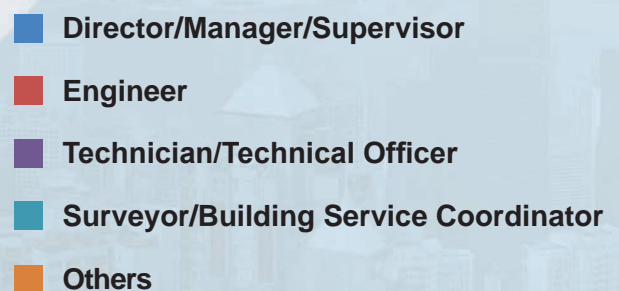
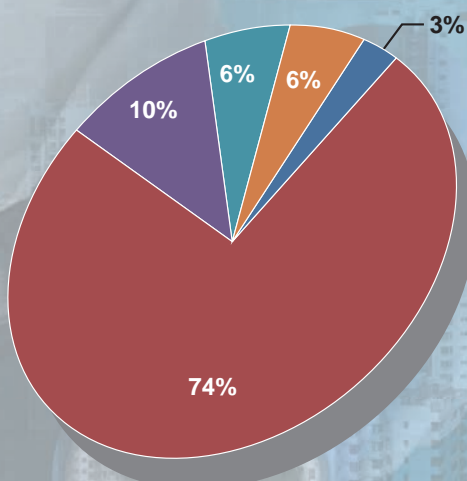
* Interview / Written Test may be arranged for applicants.

Previous Students' Profiles

2021 cohort (by Profession)



2021 cohort (by Job Position)



Programme Aims

This broad-based programme is designed for students who have successfully completed a bachelor's degree in an engineering related discipline or equivalent. The programme aims to provide an integrated course to broaden students' knowledge in a quality setting.

The major aim of the programme is also to provide an education opportunity for engineering graduates who will be capable of accepting extensive management responsibilities, undertaking independent and critical thinking, thus enhancing and extending their intellectual development whilst becoming conversant with the nature of the industry. This will develop their ability to arrive at optimum solutions to complex engineering, technological, organisational and managerial problems. The programme will:

- encourage students to approach their academic and subsequent professional careers as creative and innovative managers and engineers;
- ensure that successful graduates will have the potential to contribute to significant advancement in engineering and technology and social issues associated with the fire industries.



Programme Objectives and Learning Outcomes

Upon successful completion of the programme, it is expected that graduates will:

- be able to develop and apply advanced engineering skills to the resolution of fire safety and fire engineering problems;
- be able to communicate their ideas effectively and innovatively in a clear and concise manner to both the related professions and to persons outside the industry;
- be better placed to make policy decisions on matters such as fire precautions; and
- be better equipped to take senior managerial responsibility, including financial and legal considerations in private industry and the parallel public sectors.

Programme Structure

The programme will be delivered by academic staff from UCLan, local academics and practitioners. The curriculum has been designed to provide a logical and planned development from fundamental principles to specific applications, with an increasing level of integration between the components.

The MSc programme includes 8 modules (7 modules and a dissertation) spread over two years.

Module Title	Credits
Fire Protection Strategies	20
Research Methods	20
Risk Assessment and Management	20
Advanced Engineering Design Project	20
Fire Engineering Solutions	20
Fires in Buildings	20
Computational Fluid Dynamics	20
Advanced Engineering Dissertation	40

* The module combination, module credits and teaching sequence are subject to revision by UCLan.

Module Descriptors

Fires in Buildings

This module aims to enable the students to understand the fundamental principles underlying fires in buildings, dominant mechanisms controlling spread of fires and fire development in enclosures and buildings, smoke movement and smoke control, fire resistance and fire severity, to characterize the stages of fire development, human behaviour in fires and evacuation, the mechanism of fire suppression agents.

The module is intended for students with a generic fire safety or engineering background; covering the basics, but advancing rapidly to topics such as reviewing Navier-Stokes and fluid mechanics.

This module will help the students to develop engineering skills in designing buildings for fire safety and fire analysis. Through the learning and teaching strategy, the module will also enhance students' employability skills such as critical thinking, independent research, problem solving and working with others.

Fire Engineering Solutions

This module concerns the strategic use of fire engineering (and the tactical exploitation and limitations of specific engineering arguments and tools) that lead to the design and implementation of non-prescriptive solutions to fire safety problems in buildings. The first task is to explore the meaning and philosophy of fire engineering, evaluating the drivers and constraints that impact upon an engineered design solution. The second to investigate common techniques and the building services provision that enable these solutions to be implemented.

This module builds on the concepts of heat and mass transfer studies in mechanically biased engineering first degrees. As well as examining accepted strategies for providing fire-safe buildings, the module involves critical evaluation and application of theoretical and empirical models used in modern fire engineering practice, together with a rigorous study of some of the heat and mass transfer mechanisms that underpin those models. In doing this, the opportunity is taken to introduce recent research findings that are expected to influence future practice; and also to engage the student in design activities that challenge them to think innovatively.

Computational Fluid Dynamics

The module aims to polish and enhance student's knowledge of Computational Fluid Dynamics theory and to develop their ability to use CFD software (e.g. FDS) for modelling fires in a realistic built environment. This is a key employment skill and necessary for modern engineering design solutions.

Fire Protection Strategies

This module aims to provide students with knowledge of active and passive fire protection techniques and to develop the ability to apply them in the context of modern buildings and construction projects. Exposure to various strategies that have been accepted and/or rejected and the history of fire safety engineering will help the student develop the ability to assess and/or propose design solutions. This module is intended to equip the non-engineering graduate with key skills and knowledge of protection for fire safety, enabling the graduate to operate alongside fire engineers

Risk Assessment and Management

This module aims to enable the students to understand the fundamental principles underlying the concept of risk assessment and its applications. This module is designed to develop student's competence in qualitative and quantitative methods of risk analysis, probabilistic risk assessment, fire and explosion hazards, fire and explosion risk management and related issues. Through the learning and teaching strategy, the module will enhance students' employability skills: critical thinking, independent research, problem solving, focusing on main issues, presentations and working with others.

Advanced Engineering Design Project

The engineering design project module is designed to provide students with the opportunity to extend and demonstrate engineering design skills both as team members and as individuals. The project will enable students to develop their critical thinking, problem solving and key skills at the post graduate level. The module acts as the vehicle for integrating the study themes of design, ICT and technology, in a practical context.

Research Methods

This unit is concerned with research methodology relevant to scientists in both academic and commercial environments. This module will introduce basic aspects of conducting research, reinforced by practical exercises. The aim of the module is to provide the student with transferable career skills that will allow the student to communicate scientific ideas via a variety of media and to manage and plan projects. It will also give insight into some of the legal and ethical issues surrounding scientific work. The module also prepares the students for the Fire Engineering Dissertation module.

Advanced Engineering Dissertation

This module aims to provide the students with the opportunity to develop independent research and the ability to present a coherent, critical account of the work and how it relates to that of others. On an individual basis the student will be required to carry out an in-depth study involving theoretical, computational, experimental or investigative analysis, or a combination of these. Through the learning and teaching strategy, the module will also enhance students' employability skills such as written communication skills, independent planning, execution and dissemination of research outcomes.

Administration

The programme is administered by CityU SCOPE and is closely monitored and reviewed by UCLan.

- Programme Leader (UK) :
Prof. Andrei Chamchine, International Collaborative Provisions Lead, School of Engineering, UCLan (PhD, MEng, CEng and MEI)
- Programme Leader (HK) : Ir. Dr. Alexander Ng, SCOPE, CityU (PhD, MSc(FSE), BEng(Hons) FireE, MHKIE, FIFireE, Member of SFPE).
- Associate Programme Leader (HK) :
Mr. Thomas Wong, SCOPE, CityU (BEAM Pro).
- Associate Programme Leader (HK):
Ir. Dr. Albert Yau, SCOPE, CityU (RPE, MHKIE, CEng, MIFireE, CPEng, MIEAust).

Delivery of Classes

The Universities have been monitoring the development of the pandemic closely since 2020 and the modes/schedules/methods of teaching and assessment arrangements may be changed subject to the prevailing government policies and university regulations.

Modules are arranged on weekday evenings and / or daytimes of Saturdays and Sundays. Each taught module comprises 36 hours of face-to-face teaching delivered by a combination of UK instructors and/or local instructors plus on-line learning. Each meeting will normally last for 3 hours. Modules delivered by UK instructors will be conducted intensively over 2 weeks while those delivered by local instructors will be evenly spread over in a regular part-time evening mode.

In addition to the formal contact time, students will be expected to contribute a significant amount of individual study time to background reading, research and completion of other modes of learning support activities.

Programme Duration

2 years, part-time

Medium of Instruction

English

Assessment

To obtain a Master of Science Degree in Fire Safety Engineering, a student must have successfully completed all 8 modules, including the double-weighted dissertation.

Venue

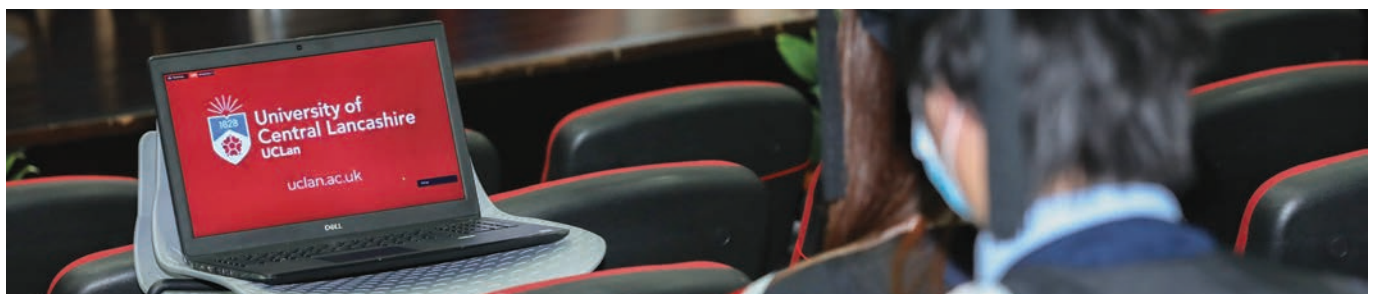
Classes will mainly take place in SCOPE Tsim Sha Tsui East Learning Centre and teaching venues at Kowloon Tong.

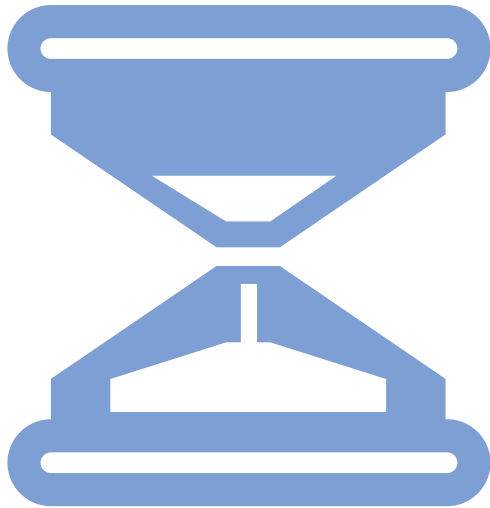
Important Notes for applying IFE discounts

Students who wish to apply for 5 % discount on the non-CEF reimbursable modules from the first instalment of 2022-2023 have to submit a copy of valid proof of IFE membership to Miss Leung at fire.scope@cityu.edu.hk on or before 24 June 2022. Submission of valid proof of IFE membership during the period of 25 June 2022 to 31 October 2022 will fall into the final round process with discount effective starting from the second instalment of 2022-2023. All submission of valid proof of IFE membership after 31 October 2022 will not be handled.

Extended Non-means-tested Loan Scheme (ENLS)

Successful applicants are eligible to apply for the Extended Non-means-tested Loan Scheme (ENLS) administered by the Student Finance Office (SFO) of the HKSAR Government. The maximum financial assistance under the ENLS is equivalent to the total tuition fees payable of the programme. For details or enquiries please contact 2150 6223 or visit the Government website www.wfsfaa.gov.hk.





Program Commencement

September 2022

Second Round Application Deadline

13 May 2022 (Fri)

All applications will be processed on a rolling and competitive basis and application may close earlier than the original deadline if all available places have been filled. Therefore, early enrolment from interested parties are highly encouraged. The whole process and selection outcome will be endorsed UCLan. All decisions will be final.

Programme Fee

HK\$123,300*, payable in 6 instalments.

** Additional fees will be charged in the case of retaking. All fees paid are non-refundable.*

Application Fee

HK\$220 to be paid on application

How to Apply

Application should be submitted online via www.scope.edu/eapplication.

Application form can be obtained upon request from the reception counter of CityU SCOPE.

All copies of academic transcripts/ certificates (including the academic qualifications stated on the admission requirement and HKALE/ HKCEE/ HKDSE result) must be submitted at the time of application. Incomplete application will cause a delay in processing.

Applicants will be selected on the basis of the academic merits and relevant work experience. All applicants will be informed of the application results. Please contact us if you do not receive our decision by early August 2022.

Online Enquiries of Application Status

An acknowledgement of your application will be sent to you via email. Confirmation of application can also be made at our website: www.scope.edu/trackstatus 7 working days after submission of your application form.



Enquiries

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