University of Lancashire

HKCT INSTITUTE OF HIGHER EDUCATION
港專學院

Bachelor of Engineering (Hons) in Fire Engineering

Part-time 2026-2027

Programme Details

Online Application

It is a matter of discretion for individual employers to recognise any qualification to which this course may lead. Bachelor of Engineering (Hons) in Fire Engineering is operated by HKCT Institute of Higher Education and awarded by University of Lancashire, UK.

(Registration Number: 253375)

The University of Lancashire "Institution for the Diffusion of Knowledge"

The University of Lancashire, established in 1828 as the "Institution for the Diffusion of Knowledge", is the largest provider of graduate-level qualifications and one of the largest universities in the North West, UK. This international, multi-campus institution operates three campus locations in the UK, with its main campus located in Preston, and a satellite campus in Larnaca, Cyprus. It serves a diverse community of over 42,000 students and staff.

The University of Lancashire offers extensive curriculum, from the Arts and Sciences to Medicine and Engineering, with research-informed and employer-engaged teaching to ensure students are assured of the highest quality of learning experience and the best possible outcomes. Nowadays, the University's employment-focused course portfolio with over 350 undergraduate programmes, over 200 postgraduate programmes and a rich array of CPD courses offers the skills and experience that industry needs.

The University of Lancashire always believes in helping people to seize every opportunity to flourish in education, at work and for life. Through the combination of academic excellence and real-world teaching, people will be inspired to transform their lives by seizing opportunities and achieving goals they never thought possible. Nowadays, the University has over 200,000 alumni worldwide.

In 2023, the University of Lancashire has been named "University of the Year", the top prize for higher education providers, at the international awards ceremony "Edufuturists Awards 2023", recognising innovation and progressive practices across the educational sector for transforming learning for the benefits of society and future generations. In 2024, the University has been ranked in the top 7% of universities worldwide (Centre for World University Rankings 2024).

Fire Safety Engineering at a Glance

Fire Safety Engineering prepares individuals for a diverse career as a fire engineering professional focusing on the design of fire protection systems, building control and fire consultancy. This field involves the application of science and engineering principles to safeguard people and their environments from the destructive effects of fire and smoke. Fire engineers develop fire safety solutions or mitigating strategies for modern buildings and structures by quantifying hazards, assessing risks and evaluating human responses.

The threats posed by fire and smoke to human lives and properties have consistently presented significant challenges to scientists and engineers. Today, these challenges are further complicated by rapid economic development and urbanisation, which have led to the construction of super-tall buildings, expansive shopping malls, intricate underground transit systems, and various large-scale structures. Additionally, the quest for innovative architectural designs, coupled with advancements in construction technologies and materials, has introduced new complexity in addressing fire safety challenges.

Bachelor of Engineering (Hons) in Fire Engineering

Conferred by the University of Lancashire, the Bachelor of Engineering (Hons) in Fire Engineering is ranked 3rd in the UK with 92% of students in graduate-level work or further study after graduation (Complete University Guide 2021). 92% of students express satisfaction with the programme's learning resources, placing it 1st in the UK (National Student Survey 2020). This programme is designed for the holders of Foundation Degree in Science in Fire Safety Engineering or individuals who are seeking professional development in the fire and safety engineering field.

Beginning in 2025, HKCT Institute of Higher Education is in collaboration with the University of Lancashire to offer this programme in Hong Kong, catering to practitioners in fire or engineering-related fields who desire to achieve the professional qualification in fire engineering. The programme will be taught by experienced professionals from the University of Lancashire, local academics and practitioners.

Through a structured academic pathway that integrates theoretical foundations with practical application, the programme aims to cultivate students' capabilities to analyse and resolve complex fire safety and engineering design challenges, thereby developing the essential professional competencies required for registration as a professional engineer.

Upon successful completion of the programme, graduates will be equipped to assume professional roles in fire-related industries and establish a solid foundation for pursuing recognition as professional engineers. Additionally, graduates will be eligible to progress into the Master of Science in Fire Safety Engineering programme to obtain an advanced qualification.

Unique Features

- **Prestigious Institution:** Conferred by the University of Lancashire, which has been recognised as the "University of the Year" at the Edufuturists Awards 2023.
- **High Ranking:** The programme is ranked 3rd in the UK and boasts a 92% success rate for graduates entering graduate-level employment or further studies after graduation (Complete University Guide 2021).
- **Student Satisfaction:** 92% of students express satisfaction with the programme's learning resources, placing it ranked 1st in the UK (National Student Survey 2020).
- **Comprehensive Curriculum:** The programme encompasses a broad range of topics, ensuring a well-rounded educational experience to prepare students for real-world applications.
- **Pathway to Professional Engineer:** A part-time study pathway designed for students to become fire and safety professionals.
- **Career Progression:** Graduates are eligible to enroll into the Master of Science in Fire Safety Engineering, facilitating further academic and professional advancement.

Professional Recognition

This programme has been recognised by the two institutes below for a couple of years:

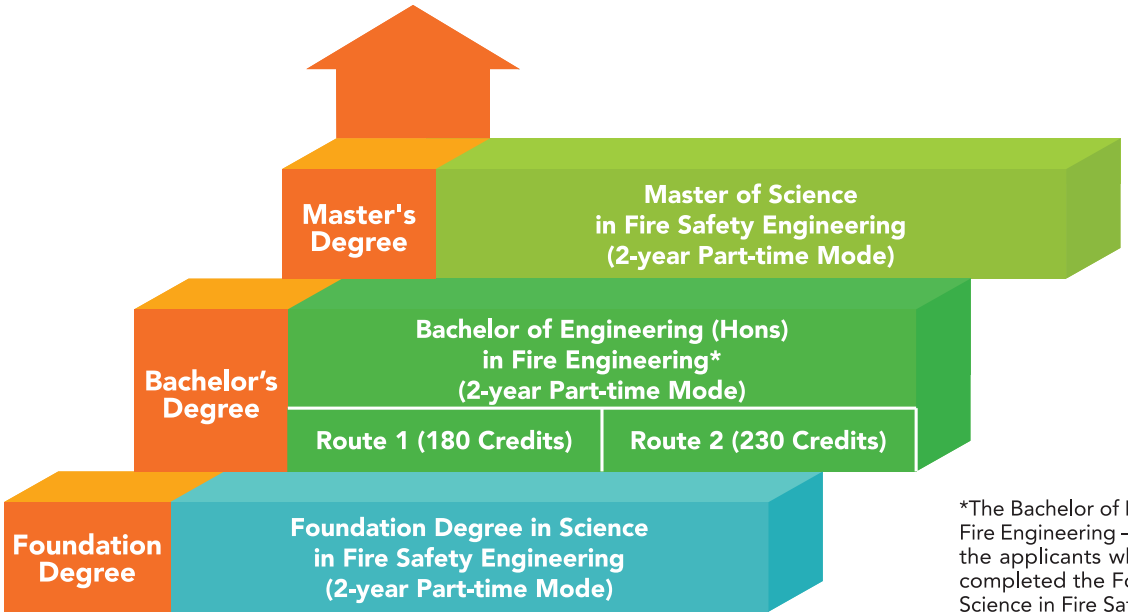
- **The Energy Institute (EI):** This programme is accredited by the EI on behalf of the Engineering Council in the UK as partially meeting the academic requirements for registration as a Chartered Engineer*.
  (Recognition renewal is in progress.)
- **The Hong Kong Institution of Engineers (HKIE):** Graduates of BEng (Hons) in Fire Engineering PLUS MSc in Fire Safety Engineering awarded by the University of Lancashire can fulfill the academic requirements for the HKIE Membership in Fire Discipline.
  (Recognition renewal is in progress.)

energy institute
Learning Affiliate

**Graduates of BEng (Hons) in Fire Engineering PLUS MSc in Fire Safety Engineering awarded by the University of Lancashire fully satisfy the academic requirements for Chartered Engineer registration at the Engineering Council (UK).*

Progression Pathway

Graduates of the Bachelor of Engineering (Hons) in Fire Engineering are eligible to enroll into the Master of Science in Fire Safety Engineering to seek a higher academic qualification.



*The Bachelor of Engineering (Hons) in Fire Engineering – Route 1 is offered to the applicants who have successfully completed the Foundation Degree in Science in Fire Safety Engineering.

Who Should Apply

- Firefighters
- Fire Safety Practitioners
- Building Engineering Practitioners
- Building Services Engineering Practitioners
- Electrical Engineering Practitioners
- Mechanical Engineering Practitioners
- Structural Engineering Practitioners
- Individuals interested in pursuing their careers in Fire Safety Engineering but possess other engineering backgrounds or qualifications

Programme Objectives

- Prepare students with the necessary scientific, engineering and technological principles and tools to resolve complex design problems in fire and fire safety applications.
- Develop the use of appropriate analytical and computational methods in the study of fires and the resolution of fire engineering problems for the built environment and related infrastructure.
- Provide an understanding and application of the legal principles as they impact upon the study of fires and fire safety, including design, project control and implementation.
- Develop a suitable understanding and application of management skills, including team working, leadership and organisation to implement strategies to resolve engineering design problems and projects.
- Develop safe building designs, taking account of the influences and implications of human behaviour in fires.
- Develop an expertise in the application of health and safety management systems to resolve problems, implement safe design solutions and to ensure safe working environments.

Programme Duration

2 years, part-time

Admission Requirements

There are two Routes available for applicants with different backgrounds of qualifications:

Route 1 (complete 180 credits in 2 years)

- Applicants should possess a Foundation Degree in Science in Fire Safety Engineering (or equivalent qualification).

Route 2 (complete 230 credits in 2 years)

- Higher Diploma (HD) / Associate Degree (AD) / Higher National Diploma (HND) (or equivalent qualification) in relevant disciplines, such as building services engineering, mechanical engineering and electrical and electronic engineering with mathematics courses studied; or
- Higher Diploma (HD) in a relevant discipline (other than the above listed), who can demonstrate competence in mathematics and have a minimum of 3 years' experience in a relevant profession. The applicant will be invited to attend an interview.

Applicants whose qualifications were not taught and assessed in English are required to demonstrate their English proficiency equivalent to IELTS 6.0.

Programme Structure

Students are required to complete 180 credits (Route 1) or 230 credits (Route 2) over 2 years of part-time study.

Module Code	Module Title	Credits	Route 1 (180 credits)	Route 2 (230 credits)
FV1001	Introduction to Combustion and Fire	20		√
FV2003	Fire and Built Environment	20		√
FV2204	Computational Engineering	20	√	√
FV2103	Project Management	10	√	√
FV2301	Engineering Analysis 2	20	√	√
FV2001	Fluid Dynamics of Fire	20		√
FV2101	Accidents and Catastrophes	10	√	
FV3001	Enclosure Fire Dynamics	20	√	√
FV3002	Fire Protection Engineering	20	√	√
FV3102	Probabilistic Risk Analysis	20	√	√
FV3201	Engineering Design Project	20	√	√
FV3900	Engineering Dissertation	20	√	√
FV3004	Fire Investigation	20	√	√

* The order of module delivery is subject to revision by the University of Lancashire.

Modules at a Glance

Introduction to Combustion and Fire

This module introduces students to the fundamental scientific principles of combustion and fire, aiming to provide a general understanding of combustion, fire, and explosion phenomena. It covers key definitions, approaches, and techniques in combustion and fire science, laying the groundwork for more advanced studies in the Fire Curriculum. Additionally, the module includes essential information from related disciplines such as chemical kinetics, thermodynamics, fluid dynamics, and heat and mass transfer, equipping students with the necessary knowledge for further education in the multidisciplinary field of fire safety.

Fire and Built Environment

This module focuses on raising awareness and understanding of the environmental impact of fires. It covers topics such as engineering sustainability, sustainable building construction methods and materials, sustainable communities, and relevant legal regulations and standards. Furthermore, it examines various types of fire behaviour within the built environment.

Computational Engineering

This module equips students with foundational knowledge and skills for computational fire hazard analysis. It covers essential numerical programming skills required to carry out basic engineering computations in generic programming environments and the application of specialist software to resolve typical fire engineering computational challenges.

Project Management

This module emphasises the role and responsibilities of the project manager, alongside leadership and organisational skills essential to the discharge of this function. It develops professional project management applications, including analytical, monitoring, and controlling techniques.

Engineering Analysis 2

This module establishes students' fundamental skills and a framework in mathematical techniques for analysing engineering problems, with practical application in the solution of common engineering issues. Students engage in solving applied mathematical problems.

Fluid Dynamics of Fire

This module focuses on helping students understand the fundamental principles of fluid flow and applying them to fires and explosions. It builds on theoretical and practical concepts, aiming to enhance students' qualitative understanding of combustion, fire, and explosion phenomena while developing skills for their quantification.

Accidents and Catastrophes

This module cultivates students' awareness and understanding of accident and catastrophe phenomena and their societal impacts. It explores natural and technological accidents and catastrophes affecting the built environment, with nationally (UK/HK) and internationally fire-related building case studies.

Enclosure Fire Dynamics

This module builds on students' fire science foundations skills and knowledge to establish their technical competence in the understanding of enclosure fires and their controlling mechanisms. It includes commonly used relationships, solutions, models, and interdisciplinary knowledge, such as chemical kinetics, thermodynamics, fluid dynamics, heat and mass transfer.

Fire Protection Engineering

This module examines fire protection principles, standard test procedures, and solutions to fire safety problems by using active and passive fire safety systems. In particular, it will focus on innovative or engineered solutions to fire safety problems. It also develops students' numerical analysis and critical evaluation skills for fire protection applications.

Probabilistic Risk Analysis

This module develops students' mainstream engineering analysis techniques, with a focus on the application of probabilistic risk modelling. It enhances students' skills of analysis, modelling, and problem-solving, which are the essential mathematical methods expected in engineering programmes worldwide.

Engineering Design Project

This module enables students to extend and demonstrate engineering design skills, both collaboratively and individually. It fosters critical thinking, problem-solving, and key competencies via case study application by using appropriate analysis and communication tools. The module acts as the vehicle for integrating the study themes of design, ICT and technology in a practical context.

Engineering Dissertation

This module provides students with the opportunity to develop independent research and evaluation skills. 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. This module will also enhance students' employability skills, such as written communication, independent planning, execution and dissemination of research outcomes.

Fire Investigation

The module will develop students' ability to undertake a scientific fire investigation of a fire scene while ensuring the requirements with respect to safety, scene preservation, evidence collection and presentation are fully achieved.

Programme Fee

Route 1: HK$90,000, payable in 6 instalments.

Route 2: HK$115,000, payable in 6 instalments.

(NOTE: All fees paid are non-refundable.)

Administration Fee

HK$1,750

(NOTE: A non-refundable administration fee of HK$1,750 will be collected with the first instalment upon successful application.)

Teaching Venue

Learning Centres located in Jordan, Shek Mun, Kwun Tong, Tsuen Wan, Mong Kok East, Cheung Sha Wan

(The final venues will be determined by HKCT Institute of Higher Education.)

(NOTE: All modules are scheduled on weekday evenings and/or Saturdays.)

Programme Details

Online Application

Application Enquiries

Tel. : 2276 8514 / 2926 1222

The information is accurate as of the date of publication and is subject to future updates.