

**Admission Requirements for the Fire Discipline
(Normal Route)**

Item	Description	Remarks
Age	25 minimum	
Academic requirements (either (a), (b), (c) or (d))	<p>The academic requirement for Member in the Fire Engineering Discipline is to satisfy either one of the following:-</p> <p>Normally</p> <p>(a) a first engineering degree (Honours) accredited by the Institution relevant to the Discipline; or</p> <p>(b) an accredited first engineering degree as listed in the Washington Accord relevant to the Discipline and maintained by the Institution; or</p> <p>Topping up</p> <p>(c) other recognized Honours degree level qualifications in engineering with “top up” by extra academic study during the training period or working experiences as approved by the DAP.</p> <p>Individual Assessment</p> <p>(d) other non-recognized Honours degree level qualifications may be considered for the class of Member based on an individual assessment.</p>	<p>- Section 2 of “M3-Routes to Membership” is relevant.</p> <p>- See also Items 1 & 2 in the “Supplementary Information</p> <p>- See item 3, 4 & 5 in the “Supplementary Information”</p> <p>- Candidates are required to provide information in the application form (1/AQ) for consideration by the DAP.</p>
Professional Training & Experience	<p>For Candidates satisfying academic requirements in (a) and (b) above :</p> <p>(a) 2-year recognised Scheme A training followed by 2-year responsible experience; or</p> <p>(b) 5-year General Experience training followed by 1-year responsible experience</p> <p>Topping up</p> <p>(c) Candidates may undertake topping-up by extra academic studies during the training experience or extra 2-year working experience in addition to the above training and experience requirements.</p>	<p>- Section 3 of “M3-Routes to Membership” is relevant.</p> <p>- See item 6 in the “Supplementary Information”</p> <p>- See items 4 and/or 5 in the “Supplementary Information”</p>

Item	Description	Remarks
Professional Assessment	<ul style="list-style-type: none">- Report of 1600 to 2000 words on Training and experience together with the relevant drawings and documents attached to the application form in English- interview- Essay of about 1600 words to be written after the interview in English on a given topic (two hours allowed)	Section 4 of "M3 - Routes to Membership" is relevant

Supplementary Information To Satisfy Admission Requirements of Fire Discipline

1. Engineering degree programmes accredited by HKIE relevant to the Discipline:

A City University of Hong Kong

- (i) BEng (Hons) in Building Engineering (Building Services Engineering) (UGC-Funded Full-time)
- (ii) BEng (Hons) in Building Engineering (Building Services Engineering) (Self-financing Part-time)
- (iii) BEng (Hons) in Building Engineering (Building Services Engineering)(Law Minor) (UGC-Funded Full-time)

For graduates who completed successfully Fire Engineering Elective I and Fire Engineering Elective II, top up is not required. Otherwise, topping up studies comprising a total teaching/tutorial/project hours of not less than 70 will be required (see also item 4 below).

B Hong Kong Polytechnic University

- (i) BEng (Hons) in Building Services Engineering (UGC-funded Full-time and Sandwich)
- (ii) BEng (Hons) in Building Services Engineering (2-Year Self-financed Full-time)
- (iii) BEng (Hons) in Building Services Engineering (4-Year Self-financed Part-time)
- (iv) BEng (Hons) in Building Services Engineering (with specialism in Fire Engineering) (Self-financed Full or Part-time)

For courses (i) to (iii), graduates who completed successfully Fire Engineering-oriented Modules, top up is not required. Otherwise, topping up studies comprising a total teaching hour of not less than 70 will be required.

C Hong Kong University of Science and Technology

- (i) BEng (Hons) in Civil and Structural Engineering (including Civil and Environmental Engineering) (Full time)
- (ii) BEng (Hons) in Mechanical Engineering (Full time)

Topping up courses in Fire Engineering are required for covering more substantially fire safety science and engineering, human psychology & physiology, active fire protection systems analysis, smoke control, law, regulations and standards and fire risk management as appropriate, and that such topping up courses should amount to a total teaching / tutorial / laboratory / project hours of not less than 140 for course (i) and 210 for course (ii) above.

D University of Hong Kong:

- (i) BEng (Hons) in Mechanical Engineering (Building Services Engineering) (Full-time and Sandwich) [formerly named BEng (Hons) in Building Services Engineering (Full-time and Sandwich)]
- (ii) BEng (Hons) in Mechanical Engineering (Full –time and Sandwich)

Topping up courses in Fire Engineering are required for covering more substantially fire safety science and engineering, human psychology & physiology, active and passive fire protection systems analysis, smoke control, law, regulations and standards and fire risk management as appropriate, and that such topping up courses should amount to a total teaching / tutorial / laboratory / project hours of not less than 70 for course (i) and 210 for course (ii) above.

2. Accredited engineering degree listed in the Washington Accord relevant to the Discipline

A University of Central Lancashire (UCLan), through the School of Continuing and Professional Education (SCOPE), City University of Hong Kong (CityU)

- (i) BEng (Hons) in Fire Engineering (3-years Part-time) plus MSc in Fire Safety Engineering (2-years Part-time)

Other Degrees listed on the Washington Accord will be considered on a case by case basis by the Discipline Advisory Panel.

3. Other honours degrees in engineering recognized by HKIE

The HKIE maintains a list of recognized Engineering Degree Programmes that may be considered as meeting the academic requirement of the Discipline, subject to topping up studies or extra working experience as may be required, as detailed in the following Items 4 and 5. Full details of an applicant's academic qualifications shall accompany his application for consideration by the Discipline Advisory Panel.

4. Top- Up Courses in Fire Engineering

For admission into the Fire Discipline, an applicant should have completed fire electives or modules in the respective programmes as mentioned in Items 1 and 2 above. For those Candidates with Honours Engineering Degrees recognized by HKIE, as mentioned in Item 3, who have not completed or only have completed part of these academic programmes, they would need to take relevant top up studies. As the specific top up requirements depend on the curriculum of the respective degree(s) undertaken by the Candidates it is difficult to generalize, the following indicative topics can be taken as a general guidance: **

- Concepts of fire safety engineering
- Combustion and fire science
- Enclosure fire dynamics
- Active fire protection
- Passive fire protection
- Smoke control
- Interaction between fire and people (including psychological and physiological)
- Fire and evacuation modeling
- Fire safety legislation and statutory control

Top up courses can be at undergraduate or postgraduate level, a list of programmes and modules (subjects) at Bachelor or higher degree level is provided in Appendix I & II for reference. It should be noted that the availability of courses or modules in local universities are subject to changes, and they will be reviewed from time to time by the Discipline Advisory Panel.

** prior to taking up top up studies, the Fire Discipline Advisory Panel should be consulted.

5. Extra Working Experience In Lieu of Top Up Studies

As an alternative to top up studies as detailed in Item 4, Candidates can opt for two extra years (on top of the normal minimum requirements of either 4 years for Formal Training Route or six years combined training/experience for General Experience Route) of relevant work experience in Fire Engineering for fulfilling the requirement for admission in the Fire discipline, this is more clearly shown in the Chart in Appendix III.

Candidates should note that for an application through Formal Training route (Scheme A) or General Experience route, responsible experience towards Corporate Membership would only be counted after top-up requirements have been fulfilled.

6. General Experience Route

Candidates who are academically qualified but have not followed recognized Scheme A training are required to accumulate a minimum of 5 years (post-degree) experience in Fire Engineering. Such experience must be vouched for by one or more of the Candidate's supporters for membership. Full documentary evidence of his employment history and the nature of experience shall accompany his application for consideration. The Candidate shall also submit proof that he had held a minimum of one year of responsible experience, which would be counted after the fulfillment of 5-year training requirement described above.

Candidates with other recognized engineering degrees wishing to pursue a General Experience Route will need an extra 2 years on-job top up, this is more clearly shown in the Chart in Appendix III.

Appendix I**Programmes in Fire Engineering at BEng (Hons) and MSc Levels**

For candidates who do not have a degree qualification yet, or their degree awards are not recognized by the HKIE, they may wish to pursue a first degree or MSc degree in Fire Engineering operated by local universities, the followings are opportunities of study:

1. Programme: BEng (Hons) Degree in Building Services Engineering (with specialism in Fire Engineering)
 University: The Hong Kong Polytechnic University
 Mode of study: Full-time / Part-time
 Normal period of study: 3 years / 4 years
 Accreditation /Recognition Recognition by HKIE (for Fire Discipline)

2. Programme: MSc in Fire and Safety Engineering
 University: The Hong Kong Polytechnic University
 Mode of study: Full-time / Part-time
 Normal period of study: 1 year / 2.5 years
 Accreditation /Recognition Recognition as top-up programme by HKIE (for Fire Discipline)

3. Programme: BEng (Hons) in Fire Engineering
 University: University of Central Lancashire (UCLan), through the School of Continuing and Professional Education (SCOPE), City University of Hong Kong (CityU)
 Mode of study: Part-time
 Normal period of study: 3 years
 Accreditation /Recognition BEng (Hons) Fire Engineering plus MSc in Fire Safety Engineering satisfies the current academic requirements for Membership of the Hong Kong Institution of Engineers (Fire Discipline)

4. Programme: MSc in Fire Safety
 University: University of Central Lancashire (UCLan), through the School of Continuing and Professional Education (SCOPE), City University of Hong Kong (CityU)
 Mode of study: Part-time
 Normal period of study: 2 years
 Accreditation /Recognition Recognition as top-up programme by HKIE (for Fire Discipline)

Appendix II**List of Modules (Subjects) for Top Up or CPD in Fire Engineering**

List of Fire Engineering-oriented subjects/modules at first degree or higher degree level, available to candidates on part-time study basis, offered by the Department of Building & Construction, City University of Hong Kong:

Name of Subject/Module	Pre-requisite	Contact Hours	Brief Syllabus
Fire Engineering Elective I	Basic Fire Science and Plumbing	39	Fire processes; Thermochemistry; Premixed and diffusion flames; Thermal decomposition; Combustion; Compartmental fires, Building fire modelling
Fire Engineering Elective II	Fire Engineering Elective I	39	Critical appraisal in current technology developments; Performance based fire codes; Performance based codes for fire engineering systems

Please note that the module codes specified in this leaflet may change from time to time by the Universities.

List of Fire Engineering-oriented subjects/modules at first degree or higher degree level, available to candidates on part-time study basis, offered by the Department of Building Services Engineering, Hong Kong Polytechnic University:

Name of Subject/Module	Pre-requisite	Contact Hours	Brief Syllabus
Fire Dynamics	Thermodynamics, heat transfer and fluid mechanics as normally covered in BSc/BEng courses	42	Fire processes; Premixed and non-premixed flames; Fire plumes; Fire properties of materials; Ignition; Spread of flame; Smoke; Compartmental fire; Active protection systems; Building fire modeling; Use of fire engineer's calculator, e.g. FPETOOL.
Computational Fire Modelling for Building Design	Thermofluids and engineering mathematics as normally covered in BSc/BEng courses	42	Zone modelling techniques: modelling of heat release rate, fire plume, ceiling jet; Field modelling techniques: turbulence and turbulent modelling, solution of velocity-pressure coupled equations, boundary conditions and wall functions, use of commercial computational fluid dynamics packages; Application of fire modelling results: simulation of compartmental fire, atrium fire, tunnel fire, sprinkler-plume interaction, evaluation of fire engineering systems.
Fire Engineering Systems	Knowledge of thermodynamics, hydraulics and electronics normally covered in BSc/BEng courses	42	Basic engineering science of water-based / gas / dry power fire engineering systems; Pedestal fire hydrant system, sprinkler system, water spray/deluge system, drencher system, fixed foam system, dry pipe foam system; Halon gas system, CO ₂ system and dry powder system; Computer programmes for system design; Smoke control systems; Fire safety control in HVAC systems; Fire detection systems, fire communication systems and false alarm.
Design Considerations for	Nil	42	Fire safety management by design: rationale of fire safety design, system

Please note that the module codes specified in this leaflet may change from time to time by the Universities.

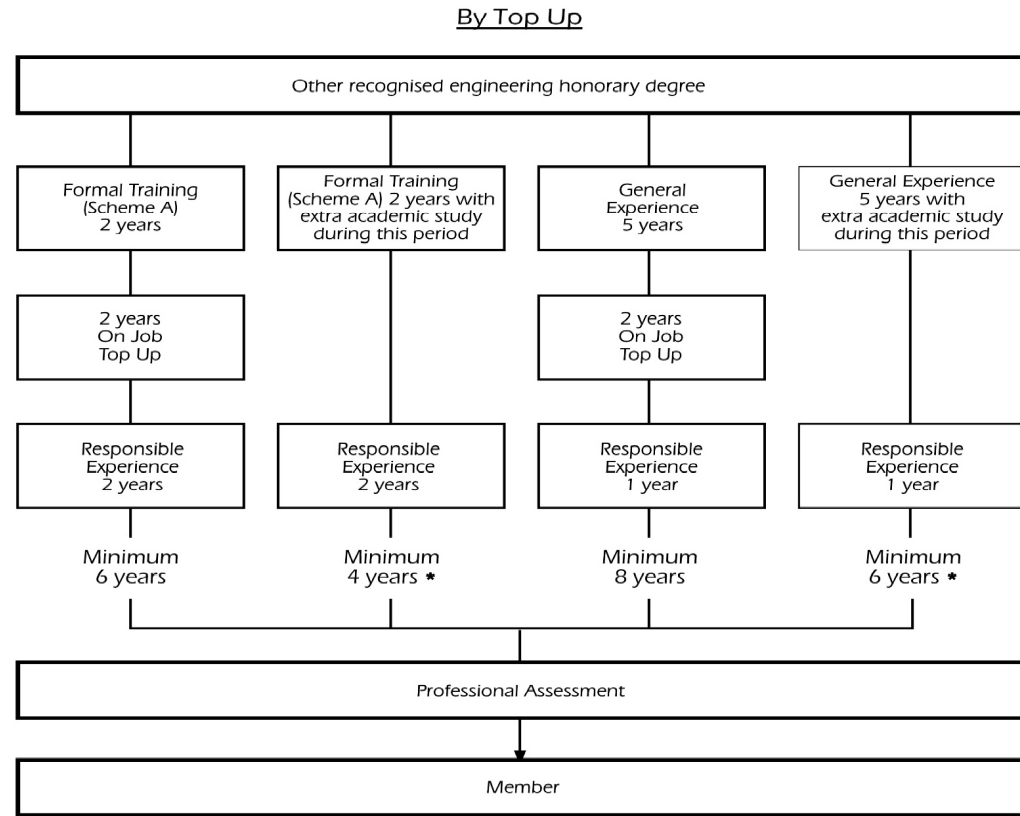
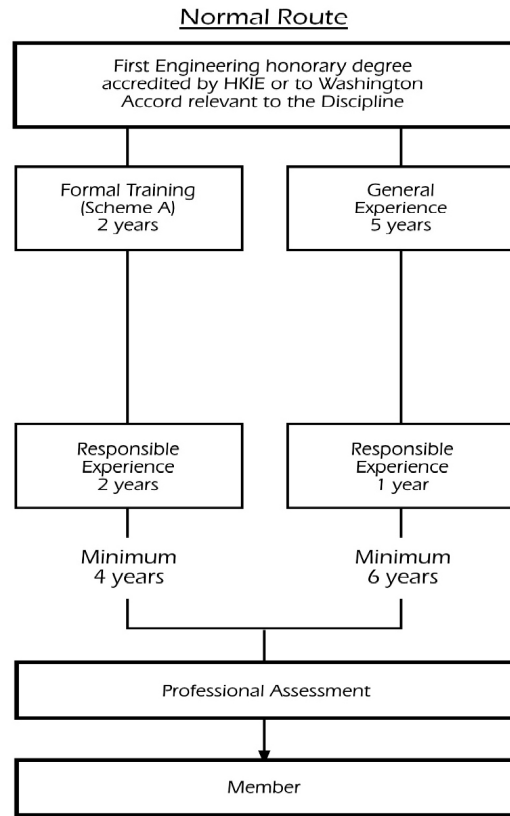
List of Fire Engineering-oriented subjects/modules at first degree or higher degree level, available to candidates on part-time study basis, offered by the Department of Building Services Engineering, Hong Kong Polytechnic University:

Name of Subject/Module	Pre-requisite	Contact Hours	Brief Syllabus
Fire Safety Management			approach to fire safety design, NFPA decision tree, basic science of fire, fire hazards; Risk analysis and assessment: fire risk ranking, risk assessment model, response and performance of fire systems, human responses; Fire safety administration in the building industry: principles and techniques of fire safety management, planning for emergencies, fire insurance, fire investigation, security; Case studies.
Legislation Aspects of Fire Safety Management	Nil	42	Fire safety management by legislation: principles and philosophy of fire safety legislation, legal systems, code of practice, fire services installations inspection and testing, fire safety practice, self-regulation; Insurance; Fire safety and the community: community fire losses, fire statistics, fire safety provisions and management strategies, public fire safety education; Performance based fire codes; Case studies.

Please note that the module codes specified in this leaflet may change from time to time by the Universities.

ROUTES TO MEMBERSHIP

Appendix III



* The minimum period of 4 years or 6 years may be extended if the academy top up study occurs after the 2-year Formal Training Period for scheme A or 5-year General Experience Period for General Experience Route