



THE HONG KONG  
POLYTECHNIC UNIVERSITY  
香港理工大學



DEPARTMENT OF  
CIVIL AND ENVIRONMENTAL ENGINEERING  
土木及環境工程學系



# Department of Civil and Environmental Engineering

## Message from the Head

### **“CEE aspires to build green infrastructure, for the benefit of mankind.”**

As a leading department in civil and environmental engineering, we take great pride in our research excellence, high quality education as well as the power of synergy achieved by a pool of renowned scholars and professional faculty members in the field. We offer not only a broad-based and high quality interdisciplinary education in the areas of structural, geotechnical, hydraulic, transportation and environmental engineering, but also an advanced practical training in occupational health and safety enabling our students to be competent engineers and professionals in this ever-changing world.

PolyU is ranked the 2nd best university for Civil Engineering in the U.S. News & World Report's Best Global Universities Rankings 2022, and ranked 21 worldwide in the QS ranking by the discipline of Civil and Structural Engineering, proving our outstanding research performance in the field. Reflected by the H-index, the productivity and impact of our published work has been ranked top 3 for nine consecutive years. Riding on the international recognition in the rankings, we have performed particularly well in securing external research grants, including two Theme Based Research projects with a total funding of HK\$85.79 million in 2017/18 and 2018/19 and four Research Impact Fund projects with a total funding of HK\$25.86 million in 2018/19. In 2020/21, we have secured a total external research funding of HK\$32.8 million.

Throughout the years, our Department has developed close collaborations with the local construction industry, overseas institutions and partners in a wide range of research projects. In addition, through our strong ties with the public and private sectors, our students have obtained many internship opportunities to gain practical work exposure in Hong Kong, Mainland China and overseas countries. Infrastructure and sustainable urban development are evolving with massive investments earmarked for infrastructure projects worldwide. Under the "One-Belt-One-Road" strategy and the "Greater Bay Area" development, our graduates will be able to play vital and proactive roles in these development projects, and make contributions for the betterment of Hong Kong and the Mainland.

In the coming years, we will strive to explore and strengthen our networks through diverse aspects. We will continue to initiate and enhance our collaborations with potential partners in our teaching and research endeavors. Perceiving alumni network as one of our invaluable assets, we will also aspire to further expand our alumni base to solicit their unstinting support to our students in building professional networks.

Ir Prof. Poon, C.S.

Michael Anson Professor in Civil Engineering

Chair Professor of Sustainable Construction Materials and Head

Department of Civil and Environmental Engineering

The Hong Kong Polytechnic University



# Why PolyU CEE?

## Recognition for Excellence



**Best Universities for  
Civil Engineering**

U.S. News & World Report  
Best Global Universities Rankings 2022



**Civil and Structural Engineering**

QS World University Rankings  
by Subject 2021



**H-index  
QS World University Rankings  
by Subject**

For 8 consecutive years  
from 2013 to 2021



**Civil and Engineering**

ShanghaiRanking's Global Ranking  
of Academic Subjects 2021

## Accreditation by Professional Bodies

### ■ The Hong Kong Institution of Engineers (HKIE)

Most of our programmes have been accredited by HKIE. Graduates of the programmes are qualified for Scheme A training of HKIE in various disciplines:

Qualified HKIE Disciplines for Scheme A Training	BEng (Hons) in Civil Engineering	BEng (Hons) in Environmental Engineering and Sustainable Development	BEng (Hons) in Civil Engineering (Structural and Fire Safety Engineering)	BEng (Hons) in Civil Engineering (Smart Mobility) Secondary Major: AI and Data Analytics
Civil	✓		✓ <sup>+</sup>	✓ <sup>+</sup>
Environmental	✓	✓		
Fire			✓ <sup>+</sup>	
Geotechnical	✓			✓ <sup>+</sup>
Logistics & Transportation	✓ <sup>*</sup>	✓ <sup>^</sup>		✓ <sup>+</sup>
Structural	✓		✓ <sup>+</sup>	✓ <sup>+</sup>

\*on condition that graduates must have completed "CSE40408 - Traffic Surveys and Transport Planning"

<sup>^</sup>on condition that graduates must have completed at least two Transportation Engineering subjects in the curriculum

<sup>+</sup> Potential accreditation pending assessment by HKIE

### ■ The Institution of Occupational Safety and Health of the United Kingdom (IOSH)

The BSc (Hons) in Environmental and Occupational Safety & Health is accredited by IOSH. Upon completion of the programme, graduates can become a Graduate Member of IOSH and fulfill the academic requirements of applying for Registered Safety Officers (RSO) with the Labour Department of the Government of the Hong Kong SAR and Environmental Officers (EO) for government contracts.

## Promising Career Prospects

Our graduates have a wide spectrum of career opportunities in their study areas in public sectors, construction companies, consultants, non-governmental organizations (NGOs) and private agents. The employers of our graduates include, but are not limited to, Buildings Department, Civil Engineering and Development Department, Drainage Services Department, Environmental Protection Department, AECOM Asia Company Limited, Gammon Construction Limited, Ove Arup & Partners Hong Kong Limited, Yau Lee Construction Company Limited, etc.



# Academic Programmes

The Department offers a wide range of programmes in civil and environmental engineering field. For more details about programme aims & learning outcomes, curriculum and admission requirements, please visit our website: <https://www.polyu.edu.hk/cee/>.



CEE Website

## Undergraduate Programmes

### ■ BEng (Hons) Scheme in Civil Engineering and Sustainable Development (JS3120)

This brand new BEng (Hons) Scheme in Civil Engineering and Sustainable Development is designed to provide students with a high-quality interdisciplinary education in the areas of civil engineering, structural and fire safety engineering, and environmental engineering. Students have a unique opportunity to study a common curriculum for the first year so that they know how to select their major (out of four programmes) at the end of Year 1. The programmes will bring interesting and practical learning experiences to students, and offer them a range of highly in-demand skills for career development. Graduates are eligible to join Scheme A training of The Hong Kong Institution of Engineers in the Civil, Structural, Geotechnical, Fire, Environmental and Logistics & Transportation Engineering disciplines.



#### 1. BEng (Hons) in Civil Engineering

This professional programme is designed to provide students with a broad-based and high-quality interdisciplinary education in the areas of environmental, geotechnical, hydraulic, structural and transportation engineering as well as construction management. It aims to nurture well-rounded civil engineering graduates who are ready to work on projects with complex commercial, social, legal and political components.

#### 2. BEng (Hons) in Environmental Engineering and Sustainable Development

This programme is the first of its kind offered by Hong Kong institutions emphasizing environmental engineering, sustainable development, and occupational safety and health. Based on science and engineering principles, this programme covers a few environmental problems and possible solutions to water and waste management, circular economics, energy sustainability, and urban development. Graduates of this programme will be able to devise practical solutions to environmental problems and contribute to policy and safety formulation that will lead to our sustainable development.





## Undergraduate Programmes (Cont'd)



### 3. BEng (Hons) in Civil Engineering (Structural and Fire Safety Engineering)

This programme is designed to respond to the increasing demand for both structural and fire safety engineering professionals in Hong Kong and many well-developed cities in the world. It aims at educating students to be competent engineers who can design, maintain and retrofit both new and existing buildings, by providing technical knowledge of structural engineering and both active and passive fire protection technologies.

### 4. BEng (Hons) in Civil Engineering (Smart Mobility) with Secondary Major - AI and Data Analytics

This programme is designed to provide students with not only the fundamental knowledge in civil and transportation engineering, but also knowledge in data analytics and computing. It aims to educate a new generation of civil engineering students with contemporary skills including attributes such as fast learners, creative thinkers, problem-solvers, and active collaborators in the smart mobility industry.



### ■ BSc (Hons) in Environmental and Occupational Safety & Health

The programme covers two contemporary areas in Hong Kong: environment and occupational safety & health. Through studying the Programme, students can identify, develop and apply good EOSH professional practices and technologies based on sound scientific principles and legislative requirements. It serves to train competent environmental and occupational safety & health graduates for the demand in these fields. It is the only undergraduate degree programme in safety and health offered by local universities for the construction industry.

## Taught Postgraduate Programmes

### **MSc/PgD in Civil Engineering**

Through this programme, students will pursue in-depth studies related to civil engineering or broaden their knowledge of civil engineering by studying topics that are beyond their present field.

We are keen to develop students' abilities to design engineered systems or processes to meet the desired needs in civil engineering projects within realistic constraints.



### **MSc/PgD in Environmental Management and Engineering**

The programme aims to provide EITHER (1) studies of a conversion nature for graduates without formal environmental qualifications who are working or would like to work in the environmental protection field OR (2) studies of an in-depth nature for graduates who have already possessed a Bachelor's qualification in environmental science or engineering.



## Our People

The Department has over 60 academic members in five academic units, including one Member of the Chinese Academy of Sciences and seven Chang Jiang Scholars, supported by 15 office staff and 22 technical staff. It also has six world-class scholars as our Distinguished Chair Professors and Honorary Professors.

Please visit <https://polyu.hk/GOGWB> or scan the QR code for more details.



Full-time  
Academic Staff



# Our Facilities

The Department manages 29 laboratories, 2 workshops (mechanical and electronic), 1 computer room and 1 research centre in Shenzhen, Mainland China to support teaching, research and service to the community. Please visit <https://www.polyu.edu.hk/cee/about-cee/facilities/> for more details.



Our Facilities


1. Advanced Environmental Microbiology Laboratory
2. Air Pollution Laboratory
3. Atmospheric Research Laboratory
4. Bioenergy Research Laboratory
5. Carbon Analysis and Filter Handling Clean Room
6. Computer Room
7. Concrete Materials Laboratory
8. Concrete Technology Laboratory
9. Engineering Materials Micro-Mechanics Laboratory (EM3)
10. Environmental and Energy Materials Laboratory (EEM)
11. Environmental Chamber
12. Functional Construction Materials Laboratory (FCM)
13. Geology Laboratory
14. Hydraulics Laboratory
15. Laboratory for Advanced Environmental Studies
16. Light Structures Laboratory
17. Materials and Structures Durability Laboratory / Laboratory of RGC Theme-Based Research Project on Sustainable Marine Infrastructure
18. Noise and Safety Laboratory / Semi-anechoic Chamber
19. Odour Research Laboratory
20. Road Research Laboratory
21. Rock Mechanics Laboratory
22. Smart Geotechnology Laboratory
23. Smart Structures Laboratory
24. Soil Mechanics Laboratory
25. Structural Dynamics Laboratory
26. Structural Engineering Research Laboratory
27. Transport and Highway Engineering Laboratory
28. Water Analysis Laboratory
29. Water and Waste Research Laboratory
30. Water and Waste Teaching Laboratory
31. Electronic Workshop
32. Mechanical Workshop
33. Shenzhen Research Centre for Sustainable Infrastructure Development






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 CEE Website



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