

Department of Electrical and Electronic Engineering

Bachelor of Engineering (Honours) Scheme in Electrical Engineering

電機工程學(榮譽)工學士組合課程

JUPAS code: JS3170

▶ **Bachelor of Engineering (Honours) in
Electrical Engineering**

電機工程學(榮譽)工學士

▶ **Bachelor of Engineering (Honours) in
Transportation Systems
Engineering**

運輸系統工程學(榮譽)工學士

Bachelor of Engineering (Honours) in Electrical Engineering

電機工程學(榮譽)工學士

This is one of the premier electrical engineering degree programmes in Hong Kong that provides unique and up-to-date education in power and energy. The Electrical Engineering programme aims to develop professionals who serve in frontline roles in the development, design and application of power and energy systems in relevant industries. The programme also provides a pathway for students to pursue higher research and senior Engineering management later in their careers.

The curriculum is designed to emphasise the parallel development of theories and applications, and to equip students with sound communication, analytical and problem-solving skills. In addition to covering mainstream topics, such as electrical power systems, power electronics, electrical machines and drives, energy conversion and utilisation, railway and transportation engineering, and energy management, the curriculum focuses on the latest technological developments and community needs in areas, such as batteries, electric vehicles, smart grids, renewable energy as well as transportation electrification. Students will also obtain training in leadership, entrepreneurship, and communication skills. A Secondary Major in Artificial Intelligence and Data Analytics is also available to broaden the area of study, offering a wider range of expertise and future opportunities in Electrical Engineering.

With the extensive development of the power and energy industries in Mainland China and Hong Kong, the generation, transmission, application, intelligent management and utilisation of electricity and other forms of energy have become key issues of future societies. Professional electrical engineers are in heavy demand wherever energy is needed and utilised. Every year our students find relevant jobs immediately upon graduation and embark on prosperous careers. Some graduates have been awarded full scholarships to pursue PhD studies at prestigious overseas universities.

There is currently a worldwide shortage of power and energy engineers, who are in high demand in various large-scale industries and developments:

- Electric Power Generation
- Electric and Hybrid Vehicles
- Electric Mass Transportation
- Electric Apparatus Development
- Control and Automation
- Renewable Energy
- Environmental Control
- Building Services
- Product Manufacturing
- Lighting and Control
- Energy Auditing
- Intelligent Buildings
- Other Utility Companies
(e.g. airports, gas, water, telecommunications)



This programme will enable you to:

- Develop professional skills in electrical engineering that are applicable worldwide.
- Contribute to the development of a clean, green and sustainable environment through the use of state-of-the-art technologies.
- Help solve the global energy shortage and pollution crises.

Highlights

Opportunities for overseas exchange, study tours and industrial placements are available throughout the programmes to broaden the horizons of our students. Our undergraduate students have numerous opportunities to get involved in various large-scale industrial projects and international competitions. Departmental staff engage in research activities that highly acclaimed around the world and they have been honoured with numerous awards for outstanding achievements. Our students can reap the benefits of the Department's accomplishments and experience by engaging in summer research opportunities. For students with outstanding academic achievements, various scholarships and fellowships are available.



Bachelor of Engineering (Honours) in Transportation Systems Engineering

運輸系統工程學(榮譽)工學士



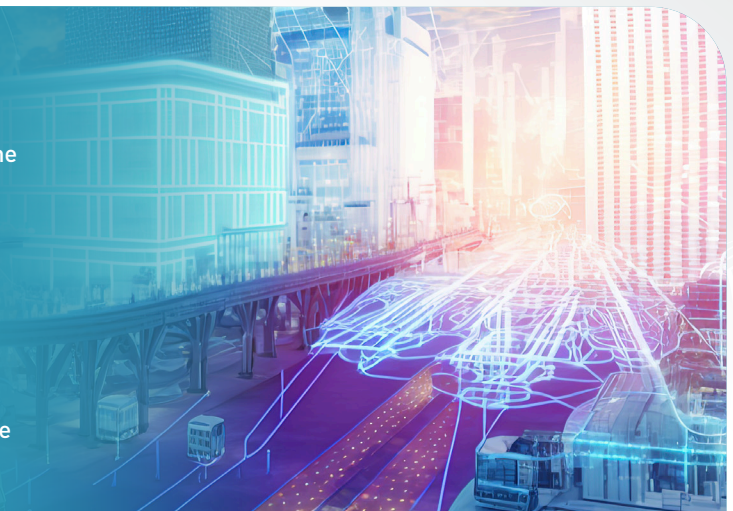
This is a unique undergraduate programme in Hong Kong that provides interdisciplinary knowledge and perspectives in modern transportation systems and a direct career path into the emerging high-growth Transportation Industry in which our graduates will serve in frontline roles followed by senior managerial positions later in their careers.

The curriculum combines our vast experience and expertise in Electrical Engineering and related engineering disciplines and incorporates the latest technological development trends of transportation systems, up-to-date engineering knowledge and current practice in transportation systems to enhance the efficiency, reliability, safety and maintainability of transportation infrastructure and services. The programme covers topics in electrical, civil and mechanical engineering, analysis, operation and management of transportation systems, and transportation economics, accounting and logistics. Students will be equipped with comprehensive knowledge of the planning, design, operation and intelligent management of transportation systems such as transportation development, traffic management, railways, electric vehicles and safety monitoring. Students will also obtain training in leadership, entrepreneurship, and communication skills.

With the emerging developments of transportation systems and incorporation of new technologies, such as electrification and artificial intelligence, design and construction of sustainable, reliable and efficient transportation infrastructure and services have become key issues of future societies. Professional Transportation Engineers who have such unique interdisciplinary background are in heavy demand in the future. Every year our students find relevant jobs immediately upon graduation and embark on prosperous careers. Some graduates have been awarded full scholarships to pursue PhD studies at prestigious overseas universities.

Why should you choose this programme?

- ? Want to be a professional engineer and contribute to the future development of Hong Kong and China?
- ? Eager to apply the latest engineering knowledge in the planning, design, operation and maintenance of transportation systems?
- ? Interested in obtaining knowledge of the current practices in transportation and the latest transportation systems technologies?
- ? Attracted by the huge job opportunities in the high-growth transportation sector and the wide range of career prospects?



If so, the Bachelor of Engineering (Honours) in Transportation Systems Engineering is your **BEST** choice!

Duration & Credit Requirement



Mode of Study

Full Time



Normal Duration

4 years

Students will study a common curriculum in Years 1 and 2, and complete their programme in either Electrical Engineering or Transportation Systems Engineering in Years 3 and 4.



Type of Applicants

- JUPAS (local)
- Non-JUPAS (local)
- Non-local



Credits Required for Graduation

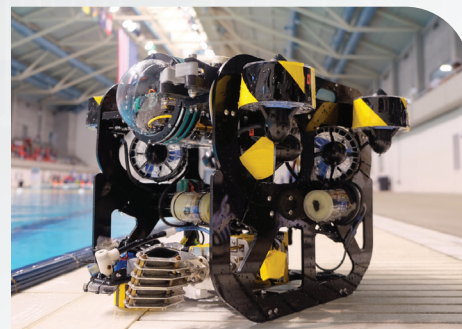
124

(plus training credits)

Students may be required to take extra subject in Physics depending on their entry qualifications

Engineering Entrepreneurship Club

Each year, our students participate in an underwater remotely operated vehicle competition to foster critical and creative thinking skills and cultivate an entrepreneurial spirit. They design, build and operate a submarine robot and control system with integrated sensors, cameras and actuators that can perform a variety of tasks at depths of over 5m! In 2018, they qualified to compete at the international level and traveled to the USA to compete in the finals of the Marine Advanced Technology Education competition. Students also worked with different companies or institutions to provide innovative solutions for enterprises.



Upstream - The underwater ROV

Comments from our graduates

PolyU provides an excellent learning environment for their students. I have encountered many enthusiastic students who have received precious learning experiences from their professors. During the past two years, I have had many opportunities to broaden my horizons through various training and exchange activities provided by the Departments of Electrical Engineering and Civil and Environmental Engineering. I am now confident that I can face the challenges in my future career as I have acquired comprehensive job-related training and experience.

Carson Chan

Bachelor of Engineering (Honours) in
Transportation Systems Engineering

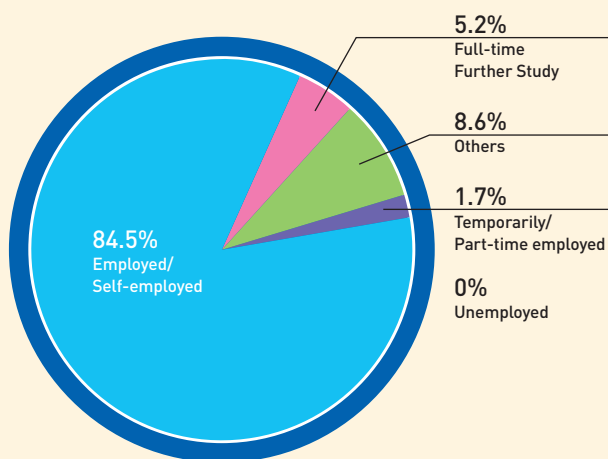
I have completed five years of secondary education in SMK Puteri, Seremban before enrolling in Cambridge A-Levels in INTI International University for my pre-U. Then, I decided to pursue my degree in electrical engineering in Hong Kong. As PolyU is well-known for its engineering degrees. I applied for it using my forecasted results, and was offered an entrance scholarship which comes with a conditional offer and covers my full tuition fee. The Department of Electrical Engineering has excellent teaching staffs and facilities, and I feel proud of becoming a PolyU EE student.

Soh Kah Yee

International student from Malaysia
Bachelor of Engineering (Honours) in Electrical Engineering

Graduate Employment Statistics

Graduates' Destination



Salary

Aeronautical & Aviation Engineering	\$20,096
Biomedical Engineering	\$19,605
Computing	\$22,956
Electrical Engineering	\$22,306
Electronic & Information Engineering	\$20,313
Industrial & Systems Engineering	\$19,205
Mechanical Engineering	\$20,031

The average salaries of our graduates are among the highest in the Faculty of Engineering.

* Source: 2022 Graduate Employment Survey, Student Affairs Office, The Hong Kong Polytechnic University

Employment opportunities for our EE and TSE graduates included:

CLP Power, Hongkong Electric, AECOM, ARUP, MTR, MVA, Thales, WSP, etc.
Other graduates to pursue Master and PhD degrees overseas and locally.



Department of Electrical and Electronic Engineering

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