高科院
Thei

DEPARTMENT OF
CONSTRUCTION, ENVIRONMENT & ENGINEERING
建造、環境及工程學系

Bachelor of Science (Honours) in Green Engineering and Sustainability
綠色工程與可持續發展(榮譽)理學士

YEAR 1 ENTRY
SELF-FINANCING
ST125206

YEAR 3
SELF-FINANCING
ST125206 (Full-time)
ST525206 (Part-time)

PROGRAMME HIGHLIGHTS

- Develops in response to growing demands of environmental engineers for sustainable development and industrial activities in Hong Kong and Greater Bay Area;
- Equips students with the professional knowledge and skills to pursue careers and to assume leadership roles to serve the manpower needs of environmental industry.
- Covers a broad range of professional knowledge related to emerging environmental technology, smart environmental monitoring, machine learning for environmental applications and renewable energy systems.

Four major development in response to Government Initiatives

- CLIMATE ACTION PLAN
- ENVIRONMENTAL PROTECTION
- SUSTAINABLE DEVELOPMENT
- SMART CITY

應用科學創建未來
APPLYING SCIENCE EMPOWERING THE FUTURE

For year-3 online application:
VTC Web-based Admissions System
www.vtc.edu.hk/admission

資歷架構 Qualifications Framework

This programme is recognised under the QF (Level 5)
QR Registration No. : 23/000262/L5
Registration Validity Period: 01/09/2023 To 31/08/2028

Industry Endorsement

"According to ManpowerGroup's 2023 "Talent Shortage Survey" report, among the 500 employers interviewed, the top five skill shortages are **information technology and data** (43%); **engineering technology** (28%); sales and marketing (25%) ; risk management and information on **ESG** (22%); and **sustainability and environment-related skills** (21%). The design of this interdisciplinary course is precisely aimed for this purpose. After graduation, students will have dual skills in engineering and information technology, and will be more favored by major companies in Hong Kong."

Ir Dr Anthony TO See Yuen
CEO, SciCorp (China) Co, Ltd

"Nowadays, artificial intelligence is a very popular tools in analyzing big data in many industry. Especially, machine learning can be used to predict the air quality in different areas of Hong Kong, helping people understand the air quality situation and take corresponding measures. For example, when the air quality is poor, people can reduce their carbon emissions by driving less. **Machine learning** can also be used to analyze energy usage in Hong Kong and help people understand patterns and trends in energy consumption. For example, using machine learning techniques, it is possible to predict energy demand in different regions, thereby helping governments formulate more effective energy policies. The advantage of this green engineering programme that it is specially designed for students to be trained as **environmental engineers** with various transferrable skills such as big data analysis."

Christina TANG
Director, Blue Sky Energy Technology

"In response to global emission reduction policies, the government has invested heavily in the development of **zero-carbon technologies** and applications in recent years. Green engineering refers to the application of modern technologies, such as clean production and information technology, to continuously improve and optimize the ecological environment, **achieve carbon neutrality**, and enable the harmonious development of man and nature. The advantage of this course is that it combines the knowledge of environmental engineering technology, sustainable development, information technology and big data analysis, so that students can understand how to use big data to contribute to Hong Kong's emission reduction."

Ir Kelvin TANG Sher Kin
Executive Director and General Manager
Luen Fat Air Condition (Holding) Trading & Engineering Co, Ltd

"The practical nature of THEi's Green Engineering Programme is highly targeted and focusing on **hands-on ability.** The enterprises and schools, **practical skills** and theoretical knowledge are closely integrated, and the talents and expertise of the students being trained closely matched with the employers' needs in Hong Kong. The students have mastered certain practical work skills before graduation and the design of each modules closely revolves around the employment needs of enterprises, which enhances social practicability and saves investment in educational resources. I strongly recommend this Programme to those youth who want to contribute to the environment and carbon reduction in Hong Kong."

Ir Rocky LAU Hoi Fung
Head of Building Solutions, EnerRight Intelligent Limited

PROGRAMME CURRICULUM

YEAR 1

- Mathematics for Green Engineering
- Introduction to Environmental Technology
- Database Principle
- Nature Conservation and Ecology
- Smart Environmental Monitoring
- BIM & VR Applications
- Introduction to Programming
- GE Core Module : Creativity & Innovation Society
- GE Core Module : Chinese 1
- GE Core Module : English for Academic Studies 1

YEAR 2

- Air & Water Quality & Acoustical Engineering
- Carbon Audit & Life Cycle Assessment
- Geographic Information System
- Project Management
- Environmental Process Modelling
- Recycling Technology and Waste Management with Photogrammetry
- Research Methods and Statistics
- GE Core Module :Entrepreneurial Mindset
- GE Core Module :Technology, Society & Work
- GE Elective Module 1

YEAR 3

- Sustainability and Corporate Social Responsibility
- Green Engineering Laboratory
- Renewable Energy Systems
- Energy Engineering & Conservation
- Machine Learning
- GE Core Module : Chinese 2
- GE Core Module : English for Academic Studies 2
- GE Core Module : English for Professional Purposes
- GE Elective Module 2
- Programme Elective 1

YEAR 4

- Environmental Impact Assessment
- Machine Learning for Environmental Applications
- IoT in Energy Management
- Final Year Project 1 & 2
- Work-Integrated-Learning (WIL)
- GE Elective Module 3
- GE Elective Module 4
- Programme Elective 2

Supporting Industrial Partners (In alphabetical order)

- Acumen Environmental Engineering & Technologies Company Limited
- AECOM Asia Company Limited
- ATAL Engineering Group
- Build King Holdings Limited
- Chun Wo Construction Holdings Company Limited
- Cinotech Consultants Limited
- Gammon Construction Limited
- Hilti (Hong Kong) Limited
- Swire Waste Management Limited
- Yau Lee Holdings Limited

100% Work Placement Training

Students will be offered up to 720 WIL hours in green engineering related companies.

① Work-Integrated-Learning at Multinational and Local Companies in the Greater Bay Area

② Participate in Government Collaboration Projects with Intensive Laboratory / Hands-on Training

③ Good Connection with Industrial Partners Supervise Student Final Year Projects

01
Emerging Environmental Technologies
Utilize modern technology to solve environmental problems and energy issues

02
Integrated Energy Controlling System
Renewable Energy System and IoT in Energy Management

03
Machine Learning Skills
Use big data analytics to predict potential environmental and energy issues

6 majors Knowledge and Skills

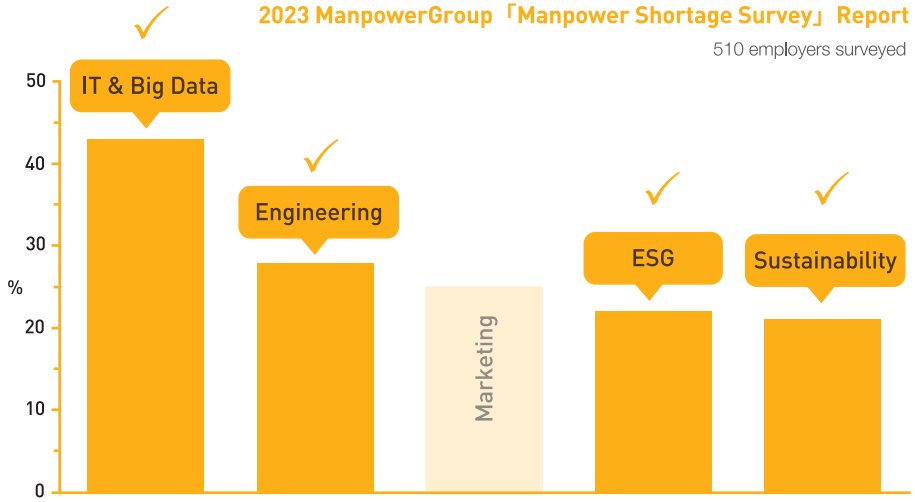
04
Smart Environmental Monitoring and Environmental Modelling Technology
Smart Environmental Monitoring and Geographical Information System

05
Green Building
BIM technology

06
Environmental, Social and Governance
Sustainability practices and corporate social responsibility

Programme nurturing 4 most required talents in the workplace.

2023 ManpowerGroup「Manpower Shortage Survey」Report
510 employers surveyed



Source: Fortune Insight

CAREER PROSPECTS

- Internship at the Environmental Protection Department and major engineering companies
- Environmental Protection Officer and Sustainability Manager
- Environmental Manager/officer
- Relevant work in Environmental, Social and Governance
- Carbon Auditor
- Environmental Information Analyst
- Green Building Assessor, Environmental Impact Assessor
- Energy Manager, Energy Engineer
- Research and Development in Renewable Energy

Bachelor of Science (Honours) in Green Engineering and Sustainability
PROGRAMME COMPLETION

Relevant Master Degree
CONTINUING EDUCATION

Hong Kong Registered Professional Engineer (Environment)
will seek HKIE accreditation
WORKING EXPERIENCE

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