

## What is Sustainable Energy Engineering (SUSEE)?

The newly established SUSEE program aims to develop leading professionals who can design and implement energy systems to respond to expanding global environmental and energy needs. This interdepartmental program focuses on both traditional and renewable energy technologies, and provides a strong multidisciplinary curriculum in energy engineering. It is managed by the Department of Chemical and Biological Engineering, and supported by the Department of Civil and Environmental Engineering, Department of Electronic and Computer Engineering, Department of Mechanical and Aerospace Engineering, and HKUST Energy Institute. The program provides many research and internship opportunities.

## What will you learn in the SUSEE program?

The SUSEE program will prepare students for careers focused on developing engineering solutions to energy related issues, including energy generation, delivery, conversion, consumption, storage and management. The students will take courses in multiple engineering disciplines including Building, Chemical, Civil, Electrical, Energy, Environmental, Mechanical, and Materials offered by different departments and divisions. Students have opportunities to practice the principles learned in a specially designed SUSEE lab course co-offered by four departments, and participate in research projects, field trips, internships, and industrial training.

Potential employers of SUSEE students include government departments, local and international engineering industries, consulting firms, and postgraduate programs.



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*Non-HKDSE and overseas students should apply to:  
Undergraduate Recruitment & Admissions Office  
The Hong Kong University of Science and Technology  
Clear Water Bay, Kowloon, Hong Kong*

*Phone : (852) 2623 1118*

*Fax : (852) 3521 1408*

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## Department of Chemical and Biological Engineering

**Chemical Engineering (CENG)**

**Chemical and Environmental  
Engineering (CEEV)**

**Bioengineering (BIEN)**

**Sustainable Energy Engineering  
(SUSEE)**

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## What is Chemical Engineering (CENG)?

Chemical Engineering involves transforming raw materials into valuable products that people use every day, from sun cream to chocolate to pharmaceuticals. This profession combines knowledge of chemistry, physics, biology, mathematic and natural science to produce products that improve our living quality, provide us clean and affordable energy sources, reduce pollutant emissions from manufacturing processes, clean up our environment, and many more.

## What will you learn in the CENG program?

1. The application of chemical engineering principles in a wide range of settings;
2. To design processes and products in the realm of chemical engineering to meet societal needs;
3. To develop an awareness of contemporary issues as they relate to engineering;
4. The ability to solve chemical engineering and related problems critically and creatively; and
5. The knowledge to select and use appropriate engineering tools and data effectively.

## What is Chemical and Environmental Engineering (CEEV)?

Hardly a week goes by without newspaper headlines and special reports in the media warning us about our environment. Pollution is associated with human activities and is generated when products are manufactured (everything from toys to computers). A Chemical and Environmental Engineer profession is one of monitoring or removing these pollutants after they are produced or avoiding their generation right at their production process.

## What will you learn in the CEEV program?

1. The application of chemical and environmental engineering principles in a wide range of settings;
2. To design processes and products in the realm of chemical and environmental engineering to meet societal needs;
3. To develop an awareness of contemporary issues as they relate to engineering;
4. The ability to solve chemical and environmental engineering and related problems critically and creatively; and
5. The knowledge to select and use appropriate engineering tools and data effectively.

## What is Bioengineering (BIEN)?

Bioengineering is the bridge between basic life sciences and engineering. It combines the solid foundations of basic and applied sciences with the analytical, quantitative and design skill-set required of engineers. Most importantly, bioengineers are called upon to leverage their knowledge to solve real-world problems, many of which are among the grand challenges of the 21<sup>st</sup> century. This program is designed to prepare students for career opportunities in local and regional industries in pharmaceuticals and biomedical devices, biosensors, healthcare analytics, and biotechnology and healthcare products.

## What will you learn in the BIEN program?

1. The application of knowledge in bioengineering and its underlying disciplines in a wide range of settings;
2. Foundational training in science and engineering, transferable skills, data analytics, problem solving acumen and design thinking;
3. The ability to conduct experiments and analyze data in the realm of bioengineering;
4. To design bioengineering processes or products creatively to meet societal needs, as well as to evaluate critically such designs by others; and
5. To identify, formulate and solve engineering problems in the realm of bioengineering.

CBE graduates have versatile skills and can develop careers in manufacturing, R&D, quality control, and consulting in many different sectors. Our graduates work at:

- Biotechnology firms
- Consumer products companies
- Cosmetics and skin care companies
- Energy companies
- Engineering equipment companies
- Environmental engineering and consulting firms
- Food and beverages companies

- Petrochemical and polymer plants
- Pharmaceutical companies
- Process engineering design companies
- Risk and Safety Consulting Firms
- Semiconductor and electroplating companies
- Testing and certification Companies
- Utility and construction companies

- Waste management and recycling companies
- Government
- Hong Kong Productivity Council
- Hong Kong Science Park
- Banking and investment

Some graduates are entrepreneurs and start up their own companies to develop innovative technologies. Others continue to pursue higher degrees, including in top overseas universities. A number of alumni are now Professors in Hong Kong and in US.