B.Eng. (Hons) in Energy and Environmental Engineering (For Senior Year Admission)

Introduction

The Energy and Environmental Engineering (EEEN) Programme at CUHK provides the engineering knowledge and training for its graduates to tackle a broad spectrum of energy issues pertaining to renewable, environmental and building technologies. The Programme puts forth a strong platform and broad-based perspective for learning and understanding the relations and trade-offs between energy and environment, and the ensuing engineering challenges in attaining viable solutions.

Career Prospects

The Programme will afford graduates strong career prospects. They will find employability in current and emerging areas of energy systems, environmental monitoring and control, sensor instrumentation, and smart and green building technologies, among others. They can land jobs in Government, electric companies and power grid enterprises, building and construction industries, consulting firms and green groups, renewable technology companies, and vehicle industries, to cite just some of the possibilities. They can also pursue postgraduate studies in their specialized areas of interest in Hong Kong or overseas.

Major Programme Requirements

Year 1

Faculty Package
ENGG2601 Technology, Society and Engineering Practice (2 units)

Foundation Science Courses
CHEM1380 Basic Chemistry for Engineers

Foundation Mathematics Courses
ENGG1410 Linear Algebra and Vector Calculus for Engineers
ENGG2420 Complex Analysis and Differential Equations for Engineers

Major Required Courses
EEEN2020 Renewable Energy Technologies
ELEG2202 Fundamental of Electric Circuits/
ELEG3207 Introduction to Power Electronics
MAEG2030 Thermodynamics
MAEG3030 Fluid Mechanics
SEEM2540 Energy and Environmental Economics and Management

ENGG2602 Engineering Practicum (1 unit)
(5 weeks)

Year 2

Major Required Courses
EEEN3010 Building Automation and Control
EEEN4998 Final Year Project I
EEEN4999 Final Year Project II
ESSC2800 Introduction to Environmental Engineering

Major Electives
Core or Non-Core Electives
(Associate Degree Holders: 15 units; Higher Diploma Holders: 12 units)

(C) - Core Electives (at least 6 units are required)
(E) - Electives in specific streams
(N) - Non-Core Electives
(R) - Required Courses in specific streams

To qualify for a stream, students must complete a minimum of 12 units taken under the stream.

Major Electives

Sustainable Energy Technology Stream
(C)/(R) EEEN3030 Engineering Materials
(C)/(R) EEEN4020 Solar Energy and Photovoltaic Technology
(N)/(E) CHEM4280 Chemistry in Biofuel (2 units)
(N)/(E) EEEN4010 Kinetic Energy Harvesting Devices and Systems
(N)/(E) EEEN4030 Nuclear Energy and Risk Assessment
(N)/(E) EEEN4050 Energy Storage Devices and Systems
(N)/(E) EEEN4060 Energy Distribution
(N)/(E) ELEG3601 Introduction to Electric Power Systems

Green Building Technology Stream
(C)/(R) ARCH3424 Building Technology III: Environmental Technology
(N)/(R) ARCH5431 Topical Studies in Building Technology
(N)/(E) EEEN3020 Energy Utilization and Human Behavior
(N)/(E) MAEG3050 Introduction to Control Systems
(N)/(E) MAEG3920 Engineering Design and Applications
(N)/(E) MAEG4030 Heat Transfer

Environmental Engineering Stream
(C)/(R) ESSC4240 Air Pollution Science and Engineering
(N)/(R) GRMD3203 Urban Environmental Problems
(N)/(E) ARCH5431 Topical Studies in Building Technology
(N)/(E) ENSC3230 Principles of Environmental Protection and Pollution Control
(N)/(E) ENSC4240 Environmental Impact Assessment
(N)/(E) ESSC2020 Climate System Dynamics
(N)/(E) GRMD4204 Environmental Planning and Assessment
(N)/(E) MAEG4080 Introduction to Combustion

Others
(N) CSCI1020 Hands-on Introduction to C++ (1 unit)
(N) CSCI1040 Hands-on Introduction to Python (1 unit)
(N) CSCI1050 Hands-on Introduction to MATLAB (1 unit)
(N) CSCI2100/ESTR2102 Data Structures
(N) ENGG1820 Engineering Internship (1 unit)
(N) ESSC3200 Atmospheric Dynamics
(N) ESSC3220 Atmospheric Chemistry
(N) ESSC3320 Hydrogeology
(N) ESSC3600 Understanding Our Biosphere
(N) ESSC3800 Global Environmental Change
(N) ESSC4540 Remote Sensing - Principles and Applications
(N) GRMD2404 Energy and Society
(N) GRMD3202 Environmental Management
(N) GRMD3403 Methods for Resource Evaluation and Planning
(N) GRMD4202 Hydrology and Water Resources
(N) GRMD4401 Energy Resources
(N) PHYS4420 Physics in Meteorology

Admission

Local students with excellent results in their Associate Degree or Higher Diploma study can apply for admission to the senior year of the programme. Details could be found in:
http://www.oafa.cuhk.edu.hk/adm/subdegree/senior-year-admissions/admission-requirements/general-entrance-requirements.

For updated information, please refer to http://www.eeen.cuhk.edu.hk.