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 sustainable, 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.

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. Please visit the website of the Office of Admissions and Financial Aid at http://www.oafa.cuhk.edu.hk for admission details.

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
ENGG1120 Linear Algebra for Engineers/
ENGG1130 Multivariable Calculus for Engineers

Major Required Courses
EEEN2020 Renewable Energy Technologies
EEEN2040 Building Service Engineering and Green Building
ELEG2202 Fundamentals of Electric Circuits/
ELEG3207 Introduction to Power Electronics
ESSC2800 Introduction to Environmental Engineering
MAEG2030 Thermodynamics
MAEG2601 Technology, Society and Engineering Practice (2 units)
MAEG3030 Fluid Mechanics

EEEN2602 Engineering Practicum (1 unit)
(5 weeks)

Year 2

Major Required Courses
EEEN2030 Energy and Environmental Economics and Management
EEEN3030 Engineering Materials
EEEN4998 Final Year Project I
EEEN4999 Final Year Project II
MAEG4030 Heat Transfer

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) 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
(C)/(E) EEEN4050 Energy Storage Devices and Systems
(C)/(E) EEEN4060 Energy Distribution
(N)/(E) ELEG3601 Introduction to Electric Power Systems
(N)/(E) MAEG5120 Nanomaterials and Nanotechnology: Fundamentals and Applications
(N)/(E) MAEG5150 Advanced Heat Transfer and Fluid Mechanics

Green Building Technology Stream
(C)/(R) ARCH3424 Building Technology III: Environmental Technology
(C)/(R) EEEN3010 Building Automation and Control
(N)/(E) ARCH5431 Topical Studies in Building Technology
(N)/(E) EEEN3020 Energy Utilization and Human Behavior
(C)/(E) MAEG3050 Introduction to Control Systems
(N)/(E) MAEG3920 Engineering Design and Applications
(N)/(E) MAEG5150 Advanced Heat Transfer and Fluid Mechanics

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
(C)/(E) MAEG4080 Introduction to Combustion
(N)/(E) MAEG5140 Materials Characterization Techniques

Others
(N) CSCI1020 Hands-on Introduction to C++ (1 unit)
(N) CSCI2040 Introduction to Python (2 units)
(N) CSCI2100 Data Structures
(N) ENGG1820 Engineering Internship (1 unit)
(N) ENGG2760 Probability for Engineers (2 units)
(N) ENGG2780 Statistics for Engineers (2 units)
(N) ESSC3200 Atmospheric Dynamics
(N) ESSC3220 Atmospheric Chemistry
(N) ESSC3320 Hydrogeology
(N) ESSC3600 Ecosystems and Climate
(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) MAEG1020 Computational Design and Fabrication
(N) PHYS4420 Physics in Meteorology

The course list above is subject to curriculum changes. For fulfillment of graduation after admission, please refer to Undergraduate Student Handbook available at Academic and Quality Section Registry website: http://www.aqs.cuhk.edu.hk. Updated information will also be uploaded to EEEN Programme website: http://www.eeen.cuhk.edu.hk.