

## **Graduate Diploma (GD) and Master of Science (MSc) Programs in Environmental Engineering and Management**

### **Program Director:**

Chii SHANG, Professor of Civil and Environmental Engineering

In Hong Kong, as in other densely-populated cities, environmental issues such as the deterioration of air and water quality, and increased constraints on solid waste management, have posed great challenges to environmental engineers.

In recent years, rapid technological advances as well as the availability of more and more well-trained personnel in the environmental engineering field have led to a stronger demand for advanced studies at the postgraduate level in environmental engineering. The former factor means more people in the field now feel the need to keep themselves updated on the latest technologies available for solving environmental issues. The latter factor means environmental engineers now feel greater pressure to enhance their professional competency and qualification in order to stay competitive and remain occupationally mobile.

With the above background, the Graduate Diploma (GD) and Master of Science (MSc) programs in Environmental Engineering and Management are meant to meet the needs of practicing engineers who may be engaged in the design, commissioning and management of environmental facilities and infrastructure systems. To suit the schedule of individuals, the programs may be taken in either part-time or full-time mode.

The courses of the programs are designed for those who wish to strengthen their environmental engineering knowledge and to well-prepare themselves for advanced engineering practices with management responsibilities. The programs not only offer advanced environmental engineering courses beyond undergraduate level for part-time and full-time students but also enable students to take several electives from other related programs.

### ***Admission Requirements***

Applicants must possess a bachelor's degree in Civil / Chemical / Mechanical Engineering or a related engineering field with second-class honors or higher, or an equivalent qualification from a recognized university or tertiary institution.

### ***Program Fees***

The program fees for the GD and MSc programs are HK\$50,000 and HK\$100,000 respectively. New students admitted with credit transfer and graduates of the GD program subsequently admitted to the MSc program are also required to pay the full program fee.

The program fee covers two terms of study for the full-time GD program, three terms for the part-time GD program, four terms for the full-time MSc program, and six terms for the part-time MSc program. Students who stay in the program beyond the

normative study period covered by the program fee, or take additional course or need to retake any courses are required to pay additional fee. Students should refer to the program webpage for details.

### ***Curriculum***

#### **MSc Degree**

To meet the graduation requirements, MSc students are required to complete:

- A minimum of 30 credits of relevant coursework approved by the Program Director;
- Including at least 18 credits of foundation courses from the list below; and
- At least three management related courses.

#### **Graduate Diploma**

To meet the graduation requirements, GD students are required to complete:

- A minimum of 15 credits of relevant coursework approved by the Program Director;
- Including at least 9 credits of foundation courses from the list below; and
- At least two management related courses.

#### **Foundation Course List**

|      |                      |  |
|------|----------------------|--|
| CIEM | 5810*                | Engineering Risk, Reliability and Decision                                       |
| CIVL | 4460                 | Process Design of Environmental Engineering Facilities                           |
| IBTM | 5330*                | Energy Management in Buildings   |
| IBTM | 5430*                | Indoor Air Quality Technology and Management                                     |
| JEVE | 5260                 | Air Pollution Meteorology  |
| JEVE | 5310                 | Measurement of Air Pollutants  |
| JEVE | 5320 <sup>(1)</sup>  | Water Quality and Assessment   |
| JEVE | 5410*                | Risk Assessment and Contaminated Land Cleanup                                    |
| JEVE | 5420*                | Biological Waste Treatment and Management  |
| JEVE | 5430 <sup>(2)</sup>  | Solid Waste Landfill Engineering Design  |
| JEVE | 5460* <sup>(3)</sup> | Design and Management of Physico/Chemical Processes of Environmental Engineering |
| JEVE | 5470                 | Industrial Wastewater Treatment  |
| JEVE | 5480                 | Wastewater Treatment and Reuse   |
| JEVE | 5490                 | Modeling of Biological Treatment   |
| JEVE | 5510*                | Municipal Hydraulic System Design and Management                                 |
| JEVE | 5760                 | Advanced Physico-Chemical Treatment Processes                                    |
| JEVE | 5810*                | Pollution Prevention and Cleaner Production                                      |
| JEVE | 5820*                | Energy, Environment and Sustainable Development                                  |
| JEVE | 5900*                | Carbon Management for Sustainable Environment                                    |

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#### ***Notes:***

(1) *JEVE 5320 can be substituted by CENG 5320.*

(2) *JEVE 5430 can be substituted by CIVL 5460.*

(3) *JEVE 5460 can be substituted by CIVL 5410.*

\* *Management related courses.*

### Elective Course List

Pre-approved elective course list will be made available to students at the beginning of every term.

Subject to the recommendation from the Program Director and approval of the course instructor, GD and MSc students may take respectively a maximum of 3 and 6 credits of CIVL courses at 4000-level to meet the graduation requirements of the programs.

Part-time GD and MSc students may take a maximum of 9 credits in each term.

### ***Credit Transfer***

Upon the approval of the Program Director, a maximum of 6 credits and 9 credits can be transferred from other institutions to the GD and the MSc programs respectively.

### ***Graduation Requirements***

To graduate from either program, a student must complete the program with a graduation grade average (GGA) of 2.850 or above as required of all postgraduate students at the University. Students failing to meet the GGA requirement are required to repeat or take additional course(s) even if they attain passing grades for all courses.