

# Curricula for Taught Postgraduate Programs

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## Master of Science (MSc) Program in Analytical Chemistry

### Program Director:

Ian D. WILLIAMS, Professor of Chemistry

The Master of Science (MSc) program in Analytical Chemistry aims to prepare bachelor's degree holders from the Chemical and Physical Sciences discipline for employment and career in analytical laboratory. The areas of study range from materials and forensic testing to environmental sampling and food quality control. By focusing on both the background principles of modern analysis techniques and emphasis on analytical problems applied to the real-world, the program provides students with significant advantage in the job market.

The program covers key aspects of modern analysis methods with clear explanation on the physical principles behind the techniques and numerous examples showing how the techniques apply to a wide range of analytical problems. It also contains modules for extensive experimental hands-on experience including both a laboratory-based course and an individual or group project. Safety training, risk assessment and laboratory management skills are also included in the study.

On completion of the program, students are expected to:

- Have comprehensive knowledge of modern analytical techniques, their working principles and practical application in fields from forensics and pharmaceuticals to environmental and materials science;
- Be familiar with the workings of a wide variety of instrumental methods for analysis, through hands-on laboratory experience and possible conduction of research project;
- Be capable of data handling, calibration and statistical analysis of errors; and
- Be knowledgeable about modern laboratory practices, risk assessment, safety issues and laboratory management skills.

### *Admission Requirements*

Applicants must possess a bachelor's degree in Chemistry or a related subject with second class honors or higher from a recognized institution.

### *Program Duration*

The normal period for completing the program is one year in full-time mode and two years in part-time mode.

### *Program Fee*

The program fee is HK\$120,000 for 30 credits.

### **Curriculum**

Students are required to complete 30 credits of coursework, including five core courses (15 credits), two to four elective courses (6 - 12 credits), and one to three experimental / practical courses (3 - 9 credits), including the compulsory laboratory course CHMS 5201.

a) Core courses (15 credits)

CHMS 5010	Chemical Data Analysis
CHMS 5020	Elemental Analysis
CHMS 5030	Molecular Analysis
CHMS 5040	Separation Methods
CHMS 5050	Optical and Electrical Methods

b) Elective courses (6 - 12 credits)

CHMS 5110	Environmental and Food Analysis
CHMS 5120	Macromolecular Analysis
CHMS 5130	Materials Analysis
CHMS 5140	Laboratory Management

Substitution of other courses for electives may be allowed upon the approval of the Program Director and the course instructor.

c) Experimental / Practical courses (3 - 9 credits)

All students must take the compulsory laboratory course CHMS 5201.

CHMS 5201	Analytical Instrumentation Laboratory I
CHMS 5202	Analytical Instrumentation Laboratory II
CHMS 6980	Analytical Research Project

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

### **Graduation Requirements**

Students must complete the program with a graduation grade average (GGA) of 2.850 or above as required of all postgraduate students at the University.