CHEM 7280 Surface Analysis (1,1,0)
Prerequisite: Students of MSc in Analytical Chemistry
This course provides a detailed treatment of surface analytical techniques, such as XPS, AES, SEM and EDX. Applications of these techniques in the studies of heterogeneous catalysis, polymer, semiconductor, material corrosion, etc. will be demonstrated to the students.

CHEM 7311-2 Advanced Analytical Laboratory (1,*,*)
CHEM 7313 Advanced Analytical Laboratory (2,*,*)
Prerequisite: Part-time students of MSc in Analytical Chemistry
These courses aim to provide thorough hands-on experience needed to perform analytical measurements with modern instrumentation. Emphasis will be put on the in-depth understanding of the instrumentation, the procedures for the optimization of experimental conditions and the operation of the instrument for analytical measurements and also on the analytical approach to tackle problems encountered in practical laboratories.

CHEM 7331-2 Dissertation (3,*,*)
Prerequisite: Students of MSc in Analytical Chemistry
A 15-month (part-time) dissertation on an analytical related topic is to be completed independently by each candidate under the supervision of faculty members in the Department of Chemistry or in conjunction with qualified scientists or experts in industrial, government, or other testing laboratories.

CHEM 7340 Environmental Analysis and Monitoring (1,1,0)
Prerequisite: Students of MSc in Analytical Chemistry
This course provides students with conceptual information, general principles and practical utility of important environmental sampling and analysis techniques most commonly used in environmental research and pollution control.

CHEM 7350 Sample Pretreatment Methods (1,1,0)
Prerequisite: Postgraduate standing
This course introduces the principles and applications of traditional and modern sample pretreatment methods, including Soxhlet extraction, microwave extraction, pressurized liquid extraction, supercritical fluid extraction and solid-phase microextraction. Emphases will be placed on the sample pretreatment of herbal materials and foods.

CHEM 7380 Food Safety Analysis (3,2,0)
Prerequisite: Postgraduate standing
This course addresses the principles and applications of various analytical tools in food safety analysis. Most up-to-date analytical techniques for food safety monitoring with local relevance will be discussed in details.

CHEM 7390 Separation Science (3,2,0)
Prerequisite: Postgraduate standing
This course aims to educate students to understand the concepts of more advanced nature in chromatography focusing on the more recent development of gas chromatography, liquid chromatography, and capillary electrophoresis.

CHEM 7401-2 Seminar I & II (0.5,*,0)
CHEM 7403-4 Seminar III & IV (0.5,*,0)
Prerequisite: Postgraduate standing
Regular seminars will be organized which must be attended by MSc students. Speakers from outside or inside institutions and industries who are experts of a particular field will deliver lectures on the topics of food analysis, drug analysis, and environmental analysis, etc. This will enlighten students on current trends and developments in chemical analysis, in analytical problems of global and local interests.

CHEM 7411-2 Advanced Analytical Laboratory (2,*,*)
Prerequisite: Students of MSc in Analytical Chemistry
These courses aim to provide thorough hands-on experience for students to perform and understand mordern analytical instrumentation.

CHEM 7420 Mass Spectrometrics Analysis (1,*,*)
This course aims to provide students with in-depth knowledge on mass spectrometry and its application for environmental analysis, pharmaceutical analysis, bioanalysis and food analysis.

CHEM 7430 Parmaceutical and Traditional Chinese Medicinal Analysis (1,*,*)
This course aims to provide students with in-depth knowledge on selected topics in pharmaceutical and traditional Chinese medicinal analysis.

CHEM 7440 Bioanalysis (1,1,0)
Prerequisite: Postgraduate standing
This course intends to introduce students to methods that are used to analyse compounds of biological importance. Principles of modern bioanalytical techniques that are used to measure biomolecules and techniques that use biological processes for analyte detection will be discussed. Students will gain an overview of current advancements in bioanalysis.

CHEM 7450 Chemosensor and Biosensor (1,1,0)
Prerequisite: Postgraduate standing
Introduction to the field of chemosensor and biosensor, as well as an in-depth and quantitative view of the sensor design and performance analysis. Fundamental application of chemo/biosensor theory will be demonstrated including recognition, transduction, signal acquisition, and post processing/data analysis. Topics are selected to emphasize biomedical, bio-processing, environmental, and food safety application.

CHEM 7460 Forensic Analysis (1,1,0)
Prerequisite: Postgraduate standing
The course intends to introduce students the concept of forensic analysis using various daily-life scenarios. In particular, modern analytical approaches and techniques will be demonstrated in solving these forensic cases. Students will also gain an insight on the latest research trends of forensic science.

CHEM 7710 Current Topics in Chemistry (3,3,0)
Prerequisite: Research postgraduate student standing
This course is devoted to the study of important current topics in different areas of chemistry. Possible topics included Chemosensors and Biosensors, Advanced Polymer Chemistry, Structure and Chemistry of Nucleic Acids, Mass Spectrometry, Electroanalytical Chemistry, Total Synthesis of Natural Products, Physics and Chemistry in Display Technology.

CHEM 7720 Structural Methods in Chemistry (3,3,0)
Prerequisite: Research postgraduate student standing or consent of instructor
This course is aimed to introduce the various physical techniques commonly used in structure determination to the postgraduate research students in chemistry. The emphasis will be on the practical applications of these techniques in solving structural problems in chemistry rather than on a detailed discussion of the physical principles behind each technique. The techniques that will be covered include NMR, EPR, mass spectrometry and X-ray crystallography.

CHEM 7730 Analytical Process and Applied Statistics (3,2,0)
Prerequisite: Postgraduate standing
The objective of this course is to help the students to develop an analyst's approach to solve chemical analytical problems by equipping them with important basic tools including statistics, sampling and analytical planning, data treatment and interpretation, and experimental design.

CHEM 7740 Chemical Instrumentation (3,2,0)
Prerequisite: Postgraduate standing
Important concepts and developments in chemical instrumentation will be introduced. The student will acquire a better appreciation of the capabilities and limitations of these new