CHEM 4056 Special Topics in Chemistry (3,3,0)
Prerequisite: Chemistry majors with Year III standing or above or consent of instructor
This course is devoted to the study of those current and important topics in chemistry that are not covered in the core and elective courses within the programme curriculum.

CHEM 4057 Spectroscopic Techniques for Structure Determination (3,3,0)
Prerequisite: CHEM 2009 Organic Chemistry II and CHEM 3007 Physical Chemistry II; or CHEM 2036 Fundamentals of Organic Chemistry and CHEM 2046 Physical and Inorganic Chemistry; or CHEM 3025 Chemical Analysis
To enable students to understand the basic principles of some modern spectroscopic techniques commonly used in chemical structure determination. To apply the spectroscopic techniques learnt in the determination of unknown molecular structures

CHEM 4065 Structural Methods in Chemistry (3,3,0)
Prerequisite: CHEM 2009 Organic Chemistry II and CHEM 3007 Physical Chemistry II; or CHEM 2036 Fundamentals of Organic Chemistry and CHEM 2046 Physical and Inorganic Chemistry
To equip students with a working knowledge of the major structural techniques in chemistry.

CHEM 4066 Dissertation in Environmental Studies (3,*,*)
Prerequisite: Chemistry majors (Year IV standing) in Environmental Studies Concentration
This course trains students to (1) conduct detailed and extensive literature search on current topics in environmental science, and (2) organize and present the relevant information gathered from such search in a dissertation format.

CHEM 4067 Atmospheric Science (3,3,0)
Prerequisite: CHEM 2017 Physical Chemistry I or CHEM 2046 Physical and Inorganic Chemistry or consent of the instructor
This course describes the fundamentals of photochemistry, kinetics, and mechanisms to the most important homogeneous and heterogeneous processes that take place in our natural and polluted atmosphere. Their critical interactions on local, regional and global scales will be addressed as well.

CHEM 4075 Marine Chemistry (3,3,0)
Prerequisite: Any Science majors with Year III standing
This course describes the nature and the chemical process in the marine environment. It aims to provide an in-depth understanding of the interrelationship of chemistry and other marine science disciplines and our daily life. Major ion composition of seawater, inputs to and outputs from the ocean via rivers, the atmosphere and the sea floor, biogeochemical cycles within the oceanic water column and sediments, recent discoveries and development in marine chemistry will be briefly discussed.

CHEM 4076 Chemical Testing Laboratory Management and Accreditation (3,*,*)
Prerequisite: CHEM 3005 Instrumental Analysis or CHEM 3025 Chemical Analysis
The course intends to introduce students the concept of quality management system in chemical and testing laboratories. In particular, concept of ISO 9001 and ISO/IEC 17025 will be emphasized. Through laboratory practice, students will also acquire adequate technical skills in the maintenance and calibration of analytical equipment and instruments.

CHEM 4077 Dissertation in Analytical and Testing Sciences (3,*,*)
Prerequisite: Chemistry majors Year IV standing
To train students to conduct detailed and extensive literature search on current topics in pure and applied chemistry. To train students to organize and present the relevant information gathered from such search in a dissertation format.

CHEM 4085 Food Analysis (3,3,0)
Prerequisite: CHEM 3005 Instrumental Analysis or CHEM 3025 Chemical Analysis
This course addresses the basic principles, procedures, instrumentations, and applications of food analysis. Emphasis will be placed on the chemical, physical, and microbial analysis of the major components and harmful substances in foods.

CHEM 4086 Forensic Analytical Chemistry (3,3,0)
Prerequisite: BIOL 2005 Biological Chemistry or CHEM 2008-9 Organic Chemistry I & II, or CHEM 2036 Fundamentals of Organic Chemistry
To provide students the advanced analytical methods in forensic chemistry for their applications to the analysis of controlled substances and materials with an emphasis on new method development.

CHEM 4878-9 Final Year Project I & II (3,0,9)
Prerequisite: Chemistry majors Year IV standing
To guide students in the development of research methodology appropriate to the practice of chemistry and to give opportunity to students to work on problems that have practical significance.

CHEM 4888-9 Environmental Studies Project I & II (3,*,*)
Prerequisite: Chemistry majors (Year IV standing) in Environmental Studies Concentration
To guide students in the development of research methodology appropriate to the practice of environmental studies and to give opportunity to students to work on problems that have practical significance.

CHEM 4898-9 Final Year Project I & II (3,0,9)
Prerequisite: Chemistry majors Year IV standing
To guide students in the development of research methodology appropriate to the practice of chemistry and to give opportunity to students to work on problems that have practical significance.

CHEM 7210 Analytical Process and Applied Statistics (2,2,0)
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 7220 Chemical Instrumentation (2,2,0)
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 tools which will help them make better choices of instruments and methods in real life analytical problems. The material in this course will be updated from time to time to reflect the most recent trend in instrument development.

CHEM 7240 Analytical Spectroscopy (2,2,0)
Prerequisite: Postgraduate standing
This course reviews the basic principles of modern spectroscopy and their applications at an advanced level. Emphasis is laid on the instruments used most commonly in elemental analysis (atomic spectroscopies) on the one hand and those for the analysis of molecular and ionic species in solution (optical spectroscopies) on the other.

CHEM 7250 Laboratory Management (2,2,0)
Prerequisite: Postgraduate standing
The objective of this course is to introduce concepts of quality assurance, issues pertaining to laboratory management, basic