CHEM 1230 Analytical Chemistry (3,3,0) (E)
Prerequisite: A-Level Chemistry or consent of instructor
Co-requisite: CHEM 1252 Integrated Chemistry Tutorials II or CHEM 2045 Analytical & Testing Science Tutorials II
The fundamental principles of classical quantitative chemical analysis, gravimetric and volumetric analysis will be introduced, together with the statistical treatment of analytical data.

CHEM 1251 Integrated Chemistry Tutorials I (0,0,1) (E)
An integrated tutorial course supporting the courses CHEM 1260 Fundamentals of Chemistry and CHEM 1111 Organic Chemistry I. Students will engage in small group discussion and find solutions to assigned problems under the guidance of staff members of the Department of Chemistry.

CHEM 1252 Integrated Chemistry Tutorials II (0,0,1) (E)
An integrated tutorial course supporting the courses CHEM 1112 Organic Chemistry II and CHEM 1230 Analytical Chemistry. Students will engage in small group discussion and find solutions to assigned problems under the guidance of staff members of the Department of Chemistry.

CHEM 1260 Fundamentals of Chemistry (3,3,0) (E)
Prerequisite: A-Level Chemistry or Foundation of Chemistry
Co-requisite: CHEM 1251 Integrated Chemistry Tutorials I
This is intended to be the first chemistry programme course for all Chemistry majors. It is aimed to provide the students with a solid understanding of all the fundamental concepts and physical principles in chemistry necessary for the study of the more advanced or specialized programme course that follow. The topics discussed include atomic and molecular structures, chemical bonding, intermolecular forces and states of matter, and acid-base chemistry.

CHEM 1310 Physical Chemistry I (3.5,3,1) (E)
Prerequisite: A-Level Chemistry
Co-requisite: CHEM 1252 Integrated Chemistry Tutorials II
This course provides students with the fundamental concepts of chemical thermodynamics and its application in electrochemistry solution properties, phase equilibria.

CHEM 1320 Physical Chemistry Laboratory I (1,0,3) (E)
Prerequisite: CHEM 1330 Physical Chemistry I
CHEM 2320 Physical Chemistry Laboratory II (1,0,3) (E)
Prerequisite: CHEM 2330 Physical Chemistry II
These courses provide students with practical work related to the principles studied in Physical Chemistry I & II. This course is open to Chemistry majors only.

CHEM 1510 Chemistry for Life Science (3,3,0) (E)
Prerequisite: A-Level Chemistry or AS-Level Chemistry or consent of instructor
This course gives a detailed treatment of topics selected from Organic and Physical Chemistry. The discussion of stereochemistry, molecular rearrangements, and chemistry of carbonyl compounds, carbanions and natural products is to be preceded by bonding, thermodynamics, chemical kinetics and surface catalysis. This course is offered to Non-Major Students only.

CHEM 1520 Chemistry for Life Science Laboratory (1,0,3) (E)
Prerequisite: A-Level Chemistry or AS-Level Chemistry or consent of instructor
Co-requisite: CHEM 1510 Chemistry for Life Science
Experiments are selected to illustrate the principles discussed in Chemistry for Life Science.

CHEM 1660 Better Living through Chemistry (3,3,0) (E)
This course is designed for those non-science majors who are interested in the underlying chemistry of the many facets in modern living. Topics to be discussed include the chemistry of foods, cooking and wine-making, the chemistry of drugs, health and beauty products, the chemistry of new materials, the design of miniature machines and molecular devices, the chemcial tools in crime scene investigations, the molecular evolution of life, the chemistry of textiles and modern fabrics and archaeological chemistry. Live chemical demonstrations, online resources and case studies will be provided when applicable. About 4 to 5 topics from the above list will be discussed each time.

CHEM 1670 Better Living through Technologies and Innovations (3,3,0) (E)
Prerequisite: A-Level Chemistry
Designed as a free elective for science majors, the course aims to demonstrate, through daily life examples, the many important contributions and relevance of chemical sciences and technology to the betterment of humankind.

CHEM 2005 General Chemistry (3,3,0) (E)
Prerequisite: CHEM 1005 Introduction to Chemistry
Co-requisite: CHEM 2006 Integrated Tutorials I
To provide students with a good grasp of the fundamental concepts and basic principles and skills in chemistry necessary for the study of more advanced courses.

CHEM 2006 Integrated Chemistry Tutorials I (0,0,1) (E)
Co-requisite: CHEM 2008 Organic Chemistry I or CHEM 2005 General Chemistry
To enhance in-depth understanding of the lecture materials presented in the courses CHEM 2008 Organic Chemistry I and CHEM 2005 General Chemistry through small group discussion and guided problem solving.

CHEM 2007 Integrated Chemistry Tutorials II (0,0,1) (E)
Co-requisite: CHEM 2009 Organic Chemistry II, CHEM 2015 Analytical Chemistry
To enhance in-depth understanding of the lecture materials presented in the courses CHEM 2009 Organic Chemistry II and CHEM 2015 Analytical Chemistry through small group discussion and guided problem solving.

CHEM 2008-9 Organic Chemistry I and II (3,3,0) (E)
Prerequisite: NSS Level or CHEM 1005 Introduction to Chemistry
Co-requisite: CHEM 2006 Integrated Chemistry Tutorials I (For CHEM 2008) and CHEM 2007 Integrated Chemistry Tutorials II (for CHEM 2009)
To introduce students to the fundamentals of the mechanistic approach for organic reactions, to stress structures and syntheses, with special emphasis on stereochemistry, conformation and the use of spectroscopic techniques.

CHEM 2015 Analytical Chemistry (3,3,0) (E)
Prerequisite: CHEM 1005 Introduction to Chemistry
Co-requisite: CHEM 2007 Integrated Chemistry Tutorials II or CHEM 2045 Analytical & Testing Science Tutorials II
This course aims to educate students to understand the concepts of chemical analysis and to apply these fundamental principles to the analysis of environmental, clinical, industrial and other applied chemical systems.

CHEM 2016 Analytical Chemistry Laboratory (1,0,3) (E)
Prerequisite: CHEM 1005 Introduction to Chemistry
Co-requisite: CHEM 2015 Analytical Chemistry
This course aims to educate students to understand the concepts of chemical analysis and to apply these fundamental principles to the analysis of environmental, clinical, industrial and other applied chemical systems.

CHEM 2017 Physical Chemistry I (3.5,3,1) (E)
Prerequisite: CHEM 1005 Introduction To Chemistry
Co-requisite: CHEM 2005 General Chemistry
This is a foundation course in modern chemistry which provides

students with fundamental concepts of physical chemistry for their further studies in most branches of advanced chemistry. The course provides students with the concepts of chemical thermodynamics and its applications in phase equilibria and solution electrochemistry.

CHEM 2018-9 Organic Chemistry Laboratory I and II (1,0,3) (E)
Prerequisite: NSS Level (for CHEM 2018) and CHEM 2018 (for CHEM 2019)
Co-requisite: CHEM 2008 Organic Chemistry I (for CHEM 2018) and CHEM 2009 Organic Chemistry II (For CHEM 2019
To make students familiar with all fundamental purification and separation techniques applicable in organic chemistry. To develop appreciation of the need for practical skill and the importance of performing different types of organic reactions.

CHEM 2025 Physical Chemistry Laboratory I (1,0,3) (E)
Prerequisite: Chemistry major students
This course provides students with practical experimental knowledge/skills related to the principles acquired from CHEM2017 Physical Chemistry I.

CHEM 2026 Chemistry for Life Sciences (3,3,0) (E)
Prerequisite: NSS Level or CHEM 1005 Introduction to Chemistry or with consent of instructor
This course extends the basic knowledge of organic and physical chemistry learned from Hong Kong NSS Level curriculum so as to provide a foundation of this knowledge relevant to life sciences and related courses such as biological chemistry, environmental health and toxicology.

CHEM 2027 Chemistry for Life Sciences Laboratory (1,0,3) (E)
Co-requisite: CHEM 2026 Chemistry for Life Sciences
This course provides basic synthetic and purification techniques that are relevant to students with life sciences background. It also provides clear illustrations of the chemical principles of thermodynamics, kinetics and surface adsorption discussed in the lecture course.

CHEM 2035 Better Living through Technologies and Innovations (3,3,0) (E)
Prerequisite: CHEM 1005 Introduction to Chemistry
Designed as a free elective for science majors, the course aims to demonstrate, through daily life examples, the many important contributions and relevance of chemical sciences and technology to the betterment of humankind.

CHEM 2036 Fundamentals of Organic Chemistry (3,3,0) (E)
Prerequisite: CHEM 1005 Introduction to Chemistry
Co-requisite: CHEM 2037 Analytical and Testing Sciences Tutorials I
This course describes functional group and mechanistic approaches in studying the chemistry of organic and biological compounds. Correlation between structures and properties/activities will be discussed. Important organic reactions will be discussed with special emphasis on stereochemistry, reaction mechanisms and the use of modern spectroscopic methods in structural determination.

CHEM 2037 Analytical and Testing Science Tutorials I (0,0,1) (E)
Co-requisite: CHEM 2036 Fundamentals of Organic Chemistry
This course enhances in-depth understanding of the lecture materials presented in the course CHEM 2036 Fundamentals of Organic Chemistry through small group discussion and guided problem solving.

CHEM 2045 Analytical and Testing Science Tutorials II (0,0,1) (E)
Co-requisite: CHEM 2015 Analytical Chemistry and CHEM 2046 Phyical and Inorganic Chemistry
This course enhances in-depth understanding of the lecture materials presented in the courses CHEM 2046 Physical and Inorganic Chemistry and CHEM 2015 Analytical Chemistry through small group discussion and guided problem solving.

CHEM 2046 Physical and Inorganic Chemistry (3,3,0) (E)
Prerequisite: CHEM 1005 Introduction to Chemistry
Co-requisite: CHEM 2037 Analytical and Testing Science Tutorials I
To provide students with a solid understanding of the fundamental concepts and physical principles in physical and inorganic chemistry. This course also aims at preparing the students for several advanced level courses.

CHEM 2120 Inorganic Chemistry Laboratory (1,0,3) (E)
Co-requisite: CHEM 2190 Inorganic Chemistry
This course provides students with practical work related to the principles studied in Inorganic Chemistry. Experiments are designed for students to gain practical experiences in Inorganic Chemistry after they have studied the lecture course.

CHEM 2170 Instrumental Analysis (3,3,0) (E)
Prerequisite: CHEM 1230 Analytical Chemistry
Co-requisite: CHEM 2250 Integrated Chemistry Tutorials III
Instrumental techniques like spectroscopy, flame emission and atomic absorption, solvent extraction and chromatography will be studied. This course forms the basis for advanced studies in instrumental analysis, environmental studies and industrial studies.

CHEM 2180 Biochemistry (3,3,0) (E)
Prerequisite: CHEM 1112 Organic Chemistry II
This course gives an introduction to the basic concepts of biochemistry. Topics covered include carbohydrates, lipids, proteins, and nucleic acids. Special attention is given to their structures, properties, catabolisms and biosyntheses. Enzymes will also be discussed.

CHEM 2190 Inorganic Chemistry (3,3,0) (E)
Prerequisite: CHEM 1112 Organic Chemistry II, CHEM 1260 Fundamentals of Chemistry and CHEM 2330 Physical Chemistry II
This course is aimed to provide the students with a solid understanding of all the fundamental concepts and physical principles in modern inorganic chemistry necessary for the study of the more advanced or specialized courses that follow. The topics discussed include coordination chemistry, organometallic chemistry, main group chemistry and their applications in industry and our daily life.

CHEM 2220 Instrumental Analysis Laboratory (1,0,3) (E)
Prerequisite: CHEM 1230 Analytical Chemistry
Co-requisite: CHEM 2170 Instrumental Analysis
Students are required to practise the techniques they have learned in the corresponding lecture course in the laboratory. This course is open to Chemistry majors only.

CHEM 2250 Integrated Chemistry Tutorials III (0,0,1) (E)
An integrated tutorial course supporting the courses CHEM 2170 Instrumental Analysis and CHEM 2330 Physical Chemistry II. Students will engage in small group discussion and find solutions to assigned problems under the guidance of staff members of the Department of Chemistry.

CHEM 2310 Physical Chemistry II (3.5,3,1) (E)
Prerequisite: CHEM 1310 Physical Chemistry I
This course continues to present to students the physical concepts in quantum chemistry, chemical kinetics and symmetry, and is an important prerequisite to spectroscopic techniques in structure determination, applied spectroscopy and materials science.