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)

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)

Prerequisite: CHEM 1005 Introduction to Chemistry or CHEM 1015 Foundation of 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)

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)

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)

Prerequisite: CHEM 1005 Introduction to Chemistry or CHEM 1015 Foundation of Chemistry or CHEM 1006 Chemistry for Life Sciences or with consent of instructors (for CHEM 2008) and CHEM 2008 Organic Chemistry I or CHEM 2036 Fundamentals of Organic Chemistry (for CHEM 2009)

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 2008 is not open to Analytical and Testing Sciences major students.

CHEM 2015 Analytical Chemistry (3,3,0)

Prerequisite: CHEM 1005 Introduction to Chemistry or CHEM 1015 Foundation of 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)

Prerequisite: CHEM 1005 Introduction to Chemistry or CHEM 1015 Foundation of 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 2018-9 Organic Chemistry Laboratory I and II (1,0,3)

Prerequisite: CHEM 1005 Introduction to Chemistry or CHEM 1015 Foundation of Chemistry or CHEM 1006 Chemistry for Life Sciences or with consent of instructors (for CHEM 2018) and CHEM 2018 Organic Chemistry Laboratiory I (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 2035 Better Living through Technologies and Innovations (3,3,0)

Prerequisite: CHEM 1005 Introduction to Chemistry or CHEM 1015 Foundation of 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)

Prerequisite: CHEM 1005 Introduction to Chemistry or CHEM 1015 Foundation of 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)

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)

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)

Prerequisite: CHEM 1005 Introduction to Chemistry or CHEM 1015 Foundation of Chemistry

Co-requisite: CHEM 2045 Analytical and Testing Science Tutorials II

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 2047 Chemistry Laboratory for Analytical and Testing Sciences (1,0,3)

Prerequisite: CHEM 1005 Introduction to Chemistry or CHEM 1015 Foundation of Chemistry

To provide clear illustrations of the chemical principles of thermodynamics, kinetics and surface adsorption through laboratory activites. To equip students with basic synthetic,

extraction and purification techniques which are relevant to students majoring in analytical and testing sciences.

CHEM 2120 Inorganic Chemistry Laboratory (1,0,3)
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)
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)
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)
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)
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)
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)
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.

CHEM 2320 Physical Chemistry Laboratory II (1,0,3)
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 2510 Chemical Analysis (3,3,0)
Prerequisite: A-Level/AS-Level Chemistry or CHEM 1510 Chemistry for Life Science or equivalent chemistry course
This course emphasizes the presentation of the techniques and instrumentation involved in modern chemical analysis. This course is not for Chemistry majors.

CHEM 2520 Chemical Analysis Laboratory (1,0,3)
Co-requisite: CHEM 2510 Chemical Analysis
This course provides students with the practical experience of applying the techniques studied in Chemical Analysis to the solution of analytical problems. This course is open to Applied Biology and Pharmacy in Chinese Medicine majors only.

CHEM 3005 Instrumental Analysis (3,3,0)
Prerequisite: CHEM 2015 Analytical Chemistry
This course aims to educate students to understand the fundamental knowledge in the basic theory, structure, operating principle of chemical instrumentation which can aid in the analysis of a chemical system effectively.

CHEM 3006 Instrumental Analysis Laboratory (1,0,3)
Prerequisite: CHEM 2015 Analytical Chemistry
Co-requisite: CHEM 3005 Instrumental Analysis
This course aims to allow students to practise the techniques they have learned in the corresponding lecture course in the laboratory.

CHEM 3007 Physical Chemistry II (3.5,3,1)
Prerequisite: CHEM 3037 Physical Chemistry I or CHEM 2046 Physical and Inorganic Chemistry
This course presents 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.

CHEM 3015 Inorganic Chemistry (3,3,0)
Prerequisite: CHEM 1005 Introduction to Chemistry or CHEM 1015 Foundation of Chemistry; CHEM 2009 Organic Chemistry II or CHEM 2036 Fundamentals of Organic Chemistry; CHEM 3007 Physical Chemistry II or CHEM 2046 Physical and Inorganic Chemistry
To provide students with a solid understanding of all the fundamental concepts and physical principles in inorganic chemistry and the relevance of these topics to our daily life. This course also aims at preparing the students for several advanced level courses such as Organometallic Chemistry, Organic Synthesis and Advanced Materials.

CHEM 3016 Inorganic Chemistry Laboratory (1,0,3)
Co-requisite: CHEM 3015 Inorganic Chemistry
This course provides students with practical work related to the principles studied in Inorganic Chemistry.

CHEM 3017 Physical Chemistry Laboratory II (1,0,3)
Prerequisite: Chemistry major students
This course provides students with practical experimental knowledge/skills related to the principles acquired from CHEM 2017 Physical Chemistry I and CHEM 3007 Physical Chemistry II.

CHEM 3025 Chemical Analysis (3,3,0)
Prerequisite: DSE Level Chemistry or Combined Science (Chemistry) or CHEM 1006 Chemistry for Life Sciences or equivalent Chemistry course or CHEM 1005 Introduction to Chemistry or CHEM 1015 Foundation of Chemistry
This course aims to familiarize students with the principles of analytical chemistry and basic analytical techniques including volumetric, gravimetric and instrumental analysis. This course is not open to Chemistry or Analytical and Testing Sciences major students.

CHEM 3026 Chemical Analysis Laboratory (1,0,3)
Co-requisite: CHEM 3025 Chemical Analysis
This course provides students with the practical experience of applying the techniques studied in Chemical Analysis to the solution of analytical problems.