

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)

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)

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 chemical 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 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 1330 Physical Chemistry I

Co-requisite: CHEM 2250 Integrated Chemistry Tutorials III

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 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.

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 3150 Polymer Chemistry (3,3,0)

Prerequisite: CHEM 1112 Organic Chemistry II and CHEM 2330 Physical Chemistry II, or consent of instructor

This course is designed to introduce topics covering polymerization processes, characterization of polymers and polymer related technology.

CHEM 3160 Chemical Information Search (1,1,0)

Prerequisite: CHEM 1112 Organic Chemistry II, CHEM 1260 Fundamentals of Chemistry, CHEM 2330 Physical Chemistry II and CHEM 2170 Instrumental Analysis

This course is designed to teach all Chemistry majors how to carry out an efficient search for chemical information from a variety of sources, including the primary and secondary chemical literature, the relevant scientific and technological databases and on the Internet. A hands-on workshop teaching approach will be adopted.

CHEM 3170 Environmental Analysis (3,0,3)

Prerequisite: Chemistry Major with Year III standing or CHEM 2510 Chemical Analysis

This course deals with the analysis of atmospheric, terrestrial and aquatic pollutants in the environment. An introduction of environmental quality models and modern monitoring techniques will also be covered.

CHEM 3190 Spectroscopic Techniques for Structure Determination (3,3,0)

Prerequisite: CHEM 1112 Organic Chemistry II and CHEM 2330 Physical Chemistry II, or CHEM 2510 Chemical Analysis

This course covers the basic principles and applications of several major spectroscopic techniques used in the determination of molecular structures. The techniques to be discussed include infrared (IR), Raman, nuclear magnetic resonance (NMR), electron paramagnetic resonance (EPR) spectroscopy and mass spectrometry.

CHEM 3210 Instrumental Analysis in Modern Laboratories (3,3,0)

Prerequisite: CHEM 2170 Instrumental Analysis or CHEM 2510 Chemical Analysis

Basic principles, methodologies, and instrumentation concerning major analytical techniques, such as mass spectrometry, gas and liquid chromatography, electrochemistry, and atomic spectroscopy will be covered. Emphasis will be placed on the application of