

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

Prerequisite: CHEM 1005 Introduction to Chemistry  
To provide clear illustrations of the chemical principles of thermodynamics, kinetics and surface adsorption through laboratory activities. 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) (E)**

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) (E)**

Prerequisite: CHEM 2017 Physical Chemistry I  
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) (E)**

Prerequisite: CHEM 1005 Introduction to Chemistry; CHEM 2009 Organic Chemistry II; CHEM 3007 Physical Chemistry II

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) (E)**

Prerequisite: DSE Level Chemistry or Combined Science (Chemistry) or CHEM 1006 Chemistry for Life Sciences or equivalent Chemistry course

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.