will be followed by an introduction to representative aesthetic theories in the Chinese and Western contexts, illustrated by appropriate masterpieces. The course will then identify the nature of different art media, including discussions of visual arts and performing arts. It will then outline the fundamentals of art appreciation and then discuss the relation among art, culture and society. Students will attend talk by invited artists, art exhibitions and performances.

本科目探究藝術現象的本質問題和藝術與人類發展的關係。課程 內容包括:(一)介紹中國及西方中具代表性的藝術及美學理論, 並以相關之藝術作品說明;(二)認識不同藝術媒體的性質,包 括視覺藝術與表現藝術等;(三)實踐藝術欣賞,並討論藝術、 文化和社會三者的關係。學生將出席藝術工作者的分享座談,並 參觀藝術展覽及演出。

SCI2110Systems and Control Theory(3,3,0) (E)Prerequisite:MATH 1120 Linear Algebra, MATH 1140
Computational Mathematics, MATH 1550
Calculus and Linear Algebra or MATH 1590
Calculus and Linear Algebra for Chemistry

Many problems in social science, economics, and engineering, can be modelled as linear systems. This course studies the properties of linear systems and how they can be controlled. Emphasis will be placed in understanding the important issues involved in the design and implementation of linear systems, in particular the stability analysis of feedback systems. Examples will be drawn from a wide range of fields.

SCI 2910 Logistics—Planning, Management, (3,3,0) (E) and Analysis

This course introduces the fundamental modelling techniques and analysis for logistics problems. This course will address all major issues in logistics. The course will mainly concentrate on establishing the mathematical models for various logistics problems. The solution techniques and algorithms will be also mentioned for the resulting mathematical problems. Numerous practical examples will be discussed and analysed to illustrate the modeling techniques for logistics problems. The students will learn through various examples illustrated in class to master the techniques in establishing the mathematical models for logistics problems. In addition, some computer packages will be also used to solve the resulting mathematical problems.

SCI 3110 Environmental Chemistry and (3,3,0) (E) Pollution Control

Prerequisite: Year III standing (Environmental Studies Concentration)

This course describes the sources, transport, reactivity and sink of contaminants in the environment together with various technology options used for pollution control.

SCI3120Environmental Studies Laboratory (1,0,3) (E)Prerequisite:Year III standing (Environmental Studies
Concentration)

These are practical sessions consisting of experiments utilizing the techniques commonly used in environmental studies. In addition to laboratory exercises, a field-based project will be undertaken. Visits to waste treatment plants and/or chemical industries in Hong Kong and neighbouring areas will be arranged at appropriate times. This course is open to Chemistry majors only.

SCI3210Simulation(3,2,1) (E)Prerequisite:MATH 1111 Mathematical Analysis I, MATH
1140 Computational Mathematics, MATH 1550
Calculus and Linear Algebra, MATH 1570
Advanced Calculus or MATH 1590 Calculus and
Linear Algebra for Chemistry

This course aims to introduce basic technique in computer simulation. Two computer software packages (one for continuous systems and one for discrete systems) will be taught. Various practical problems will be modelled, discussed, and simulated through computer simulation. Upon completion of this course, students should be able to simulate a wide range of practical problems in the daily life.

SCI3310Industrial Chemical Processes(3,3,0) (E)Prerequisite:(1) CHEM 1510 Chemistry for Life Science or
CHEM 2310 Physical Chemistry II; and (2) MATH
1511 Mathematical Methods for Physical Science
I, MATH 1550 Calculus and Linear Algebra or
equivalent such as AS Level Applied Mathematics

The aim of this course is to familiarize students with the application of chemical principles learned from Year I and II Chemistry major courses in various chemical industries. Material balance and unit operations are treated with illustrations chosen from modern chemical and related industries.

SCI 3450 Materials Science: Solid State, (3,3,0) (E) Surface Chemistry and Catalysis

Prerequisite: Chemistry or Physics Major with Year III standing This course provides a foundation of solid state and surface chemistry. It deals with the modern surface techniques and the application of surface science to various important industrial fields with particular reference to surface catalysis.

SCI 3510 Mathematical and Statistical (3,3,1) (E) Modelling

Prerequisite: (1) MATH 1120 Linear Algebra and (2) MATH 2110 Differential Equations or MATH 2230 Operations Research I

This course aims to facilitate students' working knowledge of the basic principles of mathematical and statistical modelling. It is designed to equip students with an understanding of how mathematics can be applied to solve problems arising in various disciplines. The case study approach is adopted in which the modelling process is described by means of a number of examples with different characteristics. Where possible, problems are modelled in more than one way to illustrate the flexibility and diversity involved in mathematical modelling, and students will gain first hand experience in a mini-project.

SCI 3530 Numerical Methods for Partial (3,3,0) (E) Differential Equations

Prerequisite: MATH 2220 Partial Differential Equations or MATH 1511-2 Mathematical Methods for Physical Science I & II

This course introduces the major numerical techniques for solving partial differential equations. Emphasis is placed on finite difference methods and finite element methods. Some typical engineering problems, such as shock waves, are analysed.

SCI3710Digital Image Analysis(3,2,1) (E)Prerequisite:MATH 1111 Mathematical Analysis I, MATH
1140 Computational Mathematics, MATH 1550
Calculus and Linear Algebra, MATH 1570
Advanced Calculus or MATH 1590 Calculus and
Linear Algebra for Chemistry

This course aims to introduce students to the foundation of digital image analysis. Students will learn elementary point operation techniques for image enhancement, and advanced techniques (including the theory of Fourier transform) for image restoration and image analysis. Students will come to understand all the major issues involved in the design and implementation of a digital imaging system.

SCI 7770 Materials Science: Solid State, (3,3,0) Surface Chemistry and Catalysis

This course provides a foundation of solid state and surface chemistry. It deals with the modern surface techniques and the application of surface science to various important industrial fields with particular reference to surface catalysis.