

SRL 3640 Independent Project (3,0,3)

Prerequisite: SRL 3630 Research Methods

The purpose of the Independent Project is to allow students to apply knowledge accumulated from the programme to pursue a small-scale research on a specific topic of their interest under the guidance of an appointed faculty member.

SRL 3650 Sports for Persons with Special Needs (3,1,2) (C)

This course aims to provide students with knowledge to demonstrate, organize and teach/coach a variety of alternate sports—such as floor hockey, floorball, goalball, bocchia and gatebal—for persons with special needs.

SRL 3660 Planning and Leading Water Activities (3,2,1) (E)

Prerequisite: RCS 0215 Physical Education (Swimming) or equivalent

This course aims to provide students with knowledge related to designing, planning and leading a variety of water (pool) activities for persons with special needs. Students will be provided with opportunities to apply knowledge to practical situations.

STAT 1131 Statistical Methods and Theory I (3,3,1) (E)

Prerequisite: A-Level Pure Mathematics, A-Level/AS-Level Applied Mathematics or AS-Level Mathematics and Statistics

This course deals with the statistical methods and theory. The emphasis is on what, how, when and why certain statistical methods can and cannot be applied. Topics include exploratory data analysis, estimation, hypothesis testing, analysis of variance, simple linear regression and nonparametric methods. Students are required to solve a variety of problems by using calculators and statistical packages such as SAS, MINITAB, SPSS, S-PLUS or R.

STAT 1132 Statistical Methods and Theory II (3,3,1) (E)

Prerequisite: STAT 1131 Statistical Methods and Theory I

This course deals with the elementary probability theory and the mathematical foundation of some commonly used statistical methods. First the rigorous mathematical frame of the probability theory based upon the concepts of random variables and probability distributions are introduced. The general procedures of statistical inference, such as parameter estimation, hypothesis test, analysis of variance are demonstrated with detailed discussion about their mathematical features. Students are required to comprehend the most commonly used probability distributions and their relations. Central Limit Theorem and related statistical application should be well understood. Several optimal schemes for the estimation accuracy and the hypothesis test power form another important part of the course.

STAT 1210 Probability and Statistics for Computer Science (3,3,1) (E)

Antirequisite: STAT 1620 Computer-aided Statistics

Prerequisite: MATH 1000 Supplementary Mathematics (Calculus and Linear Algebra) or Grade D or above in AL Pure Mathematics

This course aims to provide an understanding of the basic concepts in probability and statistical analysis, and focuses on applied probability and statistics. Students will learn the fundamental concepts of random variables, the basic concepts and techniques of parameter estimation and hypothesis testing. After taking this course, students will be able to apply the concepts to real-life IT/engineering applications and use popular statistics packages, such as SAS, SPSS, S-Plus, R or MATLAB, to perform simple and sophisticated analysis.

STAT 1620 Computer-aided Statistics (3,3,0) (E)

Antirequisite: BUS 1200 Statistics for Business, STAT 1210 Probability and Statistics or STAT 1131 Statistical Methods and Theory I

This course deals with the statistical analysis using commercial

grade computer software. It provides statistical concepts and methods so that the students learn how to make correct statistical inference by using appropriate methods. This course is NOT for students whose programmes are offered by the Department of Mathematics.

STAT 1650 Statistics and Our Society (3,3,0)

Prerequisite: HKCEE Mathematics

Issues of data and chance permeate everyday life in the news, advertisements, medical and business communications. This course focuses on developing the statistical thinking needed to gain insight from this information in order to make informed decisions. This course will take a conceptual, rather than a computational approach to learning statistics.

STAT 2110 Regression Analysis (3,3,0) (E)

Prerequisite: STAT 1131-2 Statistical Methods and Theory I & II and MATH 1120 Linear Algebra

This course aims to provide an understanding of the classical and modern regression analysis and techniques which are widely adopted in various areas such as business, finance, biology and medicine. There have been great developments in the past decades such as nonlinear regression, robust regression, nonparametric regression etc. With the help of a statistical package such as SAS, Matlab or R, students can analyse multivariate data by modern regression techniques without any difficulty.

STAT 2120 Categorical Data Analysis (3,3,0) (E)

Prerequisite: STAT 1620 Computer-aided Statistics or STAT 2110 Regression Analysis

To equip students with statistical methods for analysing categorical data arisen from qualitative response variables which cannot be handled by methods dealing with quantitative response, such as regression and ANOVA. Some computing software, such as SAS, S-PLUS, R or MATLAB, will be used to implement the methods.

STAT 2710 Design and Analysis of Surveys (3,3,0) (E)

Prerequisite: STAT 1131 Statistical Methods and Theory I or STAT 1620 Computer-aided Statistics

To provide students with a good understanding of survey operations, survey sampling methods and the corresponding analyses of data. Important points in questionnaire design will also be addressed in the course. Students will form teams to do course projects. On completion of the course, students should be able to design, carry out, and write reports based on a professional survey.

STAT 2810 Design and Analysis of Experiments (3,3,0) (E)

Prerequisite: STAT 2110 Regression Analysis

To provide an understanding of various kinds of experimental designs involving factorial and uniform designs as well as design for computer experiments. The experimental design has a long history and has been widely used in industry, agriculture, quality control, natural sciences and computer experiments. They can be applied to survey design as well. Therefore, they are useful in business and social sciences. The statistical package, SAS and UD4.0 will be used to support the lecture.

STAT 3710 Multivariate Analysis and Data Mining (3,3,0) (E)

Prerequisite: STAT 2110 Regression Analysis

To provide an understanding of the classical multivariate analysis and modern techniques in data mining. Very often, observations in the social, life and natural sciences are multidimensional or very high dimensional. This kind of data sets can be analysed by techniques in multivariate analysis and/or data mining. With the help of statistical package, such as Matlab, students will learn how to treat real multivariate problems.