



THE CHINESE UNIVERSITY OF HONG KONG



DEPARTMENT OF STATISTICS



OUR PLEDGE

The Department of Statistics at The Chinese University of Hong Kong was founded in 1982. Our primary mission is to provide a quality education and undertake cutting-edge research. In today's Information Age, statistics has become an indispensable tool in business, social studies, engineering, medicine, clinical studies, genetics and marketing. To meet the increasing demand for well-rounded statistics graduates, we offer undergraduate programmes in Statistics and Risk Management Science. We also offer postgraduate programmes leading to MPhil and PhD degrees to students who intend to become experts in the field.

Details of the Risk Management Science Programme are presented in a separate leaflet.

UNDERGRADUATE PROGRAMME IN STATISTICS

The curriculum of the Statistics Programme is specially designed to prepare students for careers in fields such as business, teaching and research. The curriculum covers the core of the subject and maintains a balance between theory and practice. Students can choose to specialise in either the Data Science and Business Statistics Stream, the Statistical Learning and Data Mining Stream, or the Data Analytics Stream.

The Data Analytics Stream was newly introduced in 2016. The curriculum includes interdisciplinary subjects covering the fields of Statistics, Mathematics and Computer Science. The objective of the stream is to meet the increasing need for skilled data analysts to turn massive data into usable information for decision making and prediction.

	Data Science and Business Statistics Stream	Statistical Learning and Data Mining Stream	Data Analytics Stream
Required Courses			
1 st Year	<ul style="list-style-type: none"> • Introduction to Statistics OR Statistics for Life Sciences • Data Science Toolbox • University Mathematics OR University Mathematics for Applications • Any One Course from Groups A/B/D in the Science Faculty Package 		
			<ul style="list-style-type: none"> • Introduction to Computing Using C++ OR Introduction to Computing Using Java OR Computer Principles and C++ Programming OR Computer Principles and JAVA Programming
2 nd Year	<ul style="list-style-type: none"> • Basic Concepts in Statistics and Probability I • Basic Concepts in Statistics and Probability II • Linear Algebra OR Methods of Matrices and Linear Algebra 		<ul style="list-style-type: none"> • Programming Languages for Statistics • Workshop on Data Exploration and Technical Writing
			<ul style="list-style-type: none"> • Introduction to Data Science
3 rd Year	<ul style="list-style-type: none"> • Applied Regression Analysis 		<ul style="list-style-type: none"> • Workshop on Data Analysis and Statistical Computing
	<ul style="list-style-type: none"> • Foundation of Financial and Managerial Statistics 	<ul style="list-style-type: none"> • Statistical Inference 	<ul style="list-style-type: none"> • Statistical Inference
4 th Year	<ul style="list-style-type: none"> • Statistics Projects OR Practicum 		
Elective Courses			
	8 courses from a list of courses in RMSC and STAT, 1 capstone course from STAT	7 courses from a list of courses in RMSC and STAT, 1 capstone course from STAT	8 courses from a list of courses in CSCI, ENGG, RMSC and STAT, 1 capstone course from STAT
Major Units	63	63	69

Examples of Elective Courses from Statistics (STAT):

- Survey Methods
- Recommender Systems
- Nonparametric Statistics
- Statistical Computing
- Applied Multivariate Analysis
- Statistical Principles of Deep Learning with Business Application
- Introduction to Stochastic Processes
- Data Mining and Statistical Learning
- Statistical Techniques in Life Sciences
- Actuarial Science
- Time Series
- Categorical Data Analysis
- Bayesian Learning
- Survival Modelling

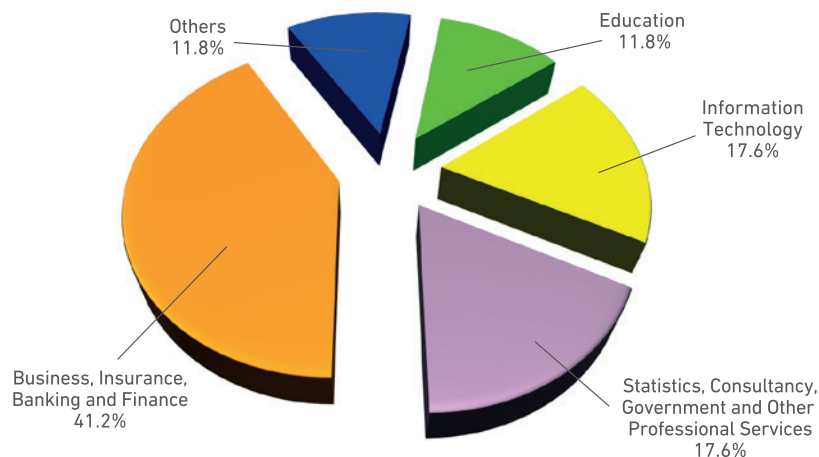
Examples of Elective Courses from Risk Management Science (RMSC):

- Simulation Methods for Risk Management Science and Finance
- Financial Data Analytics with Machine Learning
- Statistical Modelling in Financial Markets
- Theory of Risk and Insurance
- Stochastic Calculus for Finance and Risk
- Operational Risk Management

CAREER PROSPECTS

Although some of our graduates continue their studies and pursue a higher degree, most join the workforce after graduation. The career development of our graduates shows that they are well-received in various sectors of the community. Many now hold key positions in the civil service and in private sector fields such as business, finance and banking, and research and marketing.

Employment Records of 2022 Graduates



INTERNSHIPS

The internship programme reflects our continued efforts to enhance our students' career prospects. The main objective is to provide participating undergraduate students with opportunities to engage in research activities at both academic and non-academic institutions and to equip them with additional professional and statistical expertise. The Department seeks out available intern positions at both government and private institutions.

FUNG, CHUN YIN CY

(SEMESTER INTERN, RETAIL DISTRIBUTION DEPARTMENT, HANG SENG BANK)

I worked in the Retail Distribution Department of Hang Seng Bank during Term 2 last year. I mainly kept track of sales from retail branches and provided support to front-line staff. During the internship, I participated in various projects to analyse business performance in various dimensions, so as to provide better business insights to senior management.

Throughout the internship, my statistical mindset and analytical skills helped me a lot, in particular to consolidate and analyse complicated tables and figures. The computer skills (e.g., Excel, VBA, Access, R) I acquired from the STAT curriculum boosted my working efficiency. Not only did I gain better insights into the industry, but also got an opportunity to implement my statistical knowledge.

LAM, KA YU SALLY

(SUMMER INTERN AT PARADM)

Through studying statistics I have been trained to think deeply and critically when attempting to understand a problem, and to analyze data, explore meaningful findings and present them in a well-organized manner. During my summer internship in ParaDM, I suggested a regression model design and a hypothesis test for predicting the reading priority of a list of shared documents, thus leading to more efficient business decision making. The review sessions with my supervisors also enabled me to express my thoughts and discuss opinions with professionals. I believe my experience in these two months will be extremely helpful in my future career.

YEUNG, CHING HIN

(SUMMER INTERN AT THE CENSUS AND STATISTICS DEPARTMENT, HKSAR)

Participating in a departmental internship presents a valuable opportunity for me to acquire hands-on research experience while still attending school. This type of internship offers numerous benefits, including the chance to apply classroom knowledge to real-world scenarios, enhance technical abilities, and broaden my horizons in the research fields.

As an example, the Census and Statistics Department may offer a potential internship opportunity for students during the summer of 2023. This role could entail providing support in various areas such as consumer price indices, trade statistics, and demographic statistics, among others.

CHAN, CHUN HO BENJAMIN

(SUMMER INTERN AT MERCER)

I worked as a summer intern in the Employee Health and Benefits Department at Mercer, a company offering consultations in the area of employee benefits. I was responsible for carrying out the survey process that produces benchmark tables and provides insights into the market. I was required to become familiar with specific insurance terminology before I could extract the data from more than 750 benefit schedules. Being a statistics student, I have an affinity for figures. I have been trained to be meticulous and data sensitive so I was confident carrying out data input, validations and cleaning using Excel and the Access database. In short, this internship provided me with a fruitful experience working in a consulting firm.

EXCHANGE PROGRAMMES

Well recognised as valuable learning opportunities, exchange programmes are popular among statistics students. Every year many of them participate in student exchanges.

FONG CHUN HEI

Last semester, I got a valuable chance to exchange to American University. It is such a great university with abundant resources and full of nice and decent people. The US is a multi-racial country with diverse opinions and values. Different states of the US got their own charisma. You will be charmed by Mexican-liked states like Florida. You will be attracted by the metropolitan cities like New York City. The historic capital Washington DC is a must visit. A slow pace of living is the biggest difference between Hong Kong and the US. Trust me, everyone will be in love with such a great country.

LAM, CHUI PIK

I studied at Nanyang Technological University through the OAL exchange programme. The most important thing I have learnt is to integrate myself into a new environment as quickly as possible. It seems to me that the biggest difference between Singapore and Hong Kong is the culture. Singapore is a multi-racial country that is accepting of different customs, beliefs and cultures. During this journey, I met people from various backgrounds and heard their unique stories. This has broadened my horizons and opened my mind. I have also taken some major courses in Singapore to compare different teaching methods and materials in CUHK and NTU, which has given me a deeper understanding of my major.

ALUMNI

Several alumni are happy to share their experiences as CUHK Statistics graduates.

Name: LAM, HIU FUNG WILLIS (BSC 2011, MPhil 2013)

Statistician at the Census and Statistics Department, HKSAR

The importance of statistics is growing. In recent years, the government has adopted an evidence-based approach to policy making by using survey results, such as those for the Statutory Minimum Wage and Standard Working Hours. Banks make use of statistical models to identify potential customers of marketing programmes. I acquired the necessary knowledge and skills in the BSc and MPhil programmes to work in these areas. The programmes helped me build a solid foundation in statistical theories and also provided me with opportunities to apply my knowledge through case studies. If you are looking to study a practical science with many job opportunities in the future, the CUHK Statistics programme will suit you well.

Name: IP, KA YU BRIAN (BSC 2023)

Assistant data management and governance officer

Statistics involves summarizing data and aiding our understanding of the tangible world. It uses statistical approaches to analyze sample data and draw meaningful conclusions. The advancement in computing power has allowed for more complex analyses, such as deep neural networks, and handling larger data sets like big data. In the CUHK statistics program, you will learn various techniques for managing different types of data, which will be valuable in your professional pursuits. This knowledge will enhance your comprehension of data and enable you to make informed business decisions leading to increased success.

Name: CHOW, WAI KIT BENJAMIN (BSC 2010, MPhil 2012)

Computational Scientist at the Cluster Technology Limited

I am working as a computational scientist on an arbitrage team at Cluster Technology Limited. I am required to conduct research on quantitative trading strategies related to different kinds of assets, such as index futures and options. The MPhil and BSc programmes laid a solid foundation for my career. With the well-designed course curriculum, I acquired valuable statistical knowledge and programming techniques that could be applied to financial data analysis. With the case study and statistical project experience I gained in the BSc programme, I am able to put interesting statistical theories into practice.



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