

Congregation

Two Congregations will be held annually (in July and December respectively) which is to align with international practices and to facilitate the convenience for students. Graduands who are eligible for graduation will be assigned to the Congregation nearest to the completion date of their studies for conferral of degree. The Graduation Certificate normally could be collected on the day of the Congregation.

Tuition Fees

The full composition fee for the programme is HK\$218,000* for the 2024 intake. The fee shall normally be payable in two instalments over one year for full-time study or in four instalments over two years for part-time study. In addition, students are required to pay Caution Money (HK\$350), refundable on graduation subject to no claims being made, and Graduation Fee (HK\$350). With effect from 2022-23, all full-time students will be charged a student activity fee of \$100 per annum to provide support for activities of student societies and campus wide student events.

Subject to approval

Admission Requirements

- Applicants shall hold a Bachelor's degree, or an equivalent qualification with knowledge of matrices and calculus, introductory statistics and linear modelling
- Applicants shall fulfil the University Entrance Requirements.

Programme Director



Dr Olivia T K Choi
BSc UBC; MSc Oxon; PhD ISM
Department of Statistics & Actuarial Science

STAFF LIST

Professor T J Boonen
BSc, MSc, PhD Tilburg
Actuarial Science, Capital Allocation, Game Theory, Insurance Economics, Optimal (Re)insurance, Longevity Risk Modelling, Risk Sharing

Professor Y Cao
BS Fudan; MS, PhD Princeton
Machine Learning; Learning Theory; High-dimensional Data Analysis; Optimization

Professor K C Cheung
BSc(ActuSc), PhD HK; ASA
Actuarial Science; Dependent Structures; Stochastic Orders; Risk Measures; Optimal Insurance; Extreme Value Theory

Dr O T K Choi
BSc UBC; MSc Oxon; PhD ISM
High Frequency Data Analysis/ Market Co-integration; Analysis of Dually Listed Companies across Different Regions

Professor L Feng
BS Renmin U; PhD Rutgers
Statistical Machine Learning; Image Data Analysis; High-dimensional Statistics; Deep Learning

Professor E C H Fong
BA, MEng Cantab; DPhil Oxon
Bayesian Inference; Bayesian Nonparametrics; Model Selection; Causal Inference

Professor Y Gu
BSc USTC; PhD N Carolina
Survival Analysis; Non- and Semi-Parametric Inference; Biostatistics; Alzheimer's Disease; Infectious Disease; Cancer

Professor K Han
PhD HK
Computer Vision; Machine Learning; Deep Learning

Professor M Hofert
MSc Syracuse; Dipl.-Math. oec., Dr. rer. nat. Ulm
Dependence Modeling; Computational Statistics; Data Science; Quantitative Risk Management

Dr C W Kwan
BSc, PhD HK
Influential Observations; Multivariate Statistics; Non-linear Random Model

Professor E K F Lam
BA St. Thomas; MA New Brunswick; PhD HK
Survival Analysis; Biostatistics; Public Health; Analysis of Infectious Diseases

Dr A S M Lau
BEng City; MSc HK; PhD CUHK
Social Media and Big Data Analytics; Artificial Intelligence and Business/Health Informatics; Video Analytics, AI chatbot, and Metaverse; Risk Management and Business intelligence; E-learning and Knowledge Management; IS adoption, E-business Strategies and Applications (Healthcare, Finance, Marketing, and Supply Chain Management)

Dr D Lee
BSc(ActuSc), MPhil HK; PhD British Columbia, ASA
Copula Modelling; Extreme Value Theory; High-dimensional Dependence Structures; Multivariate Tail Dependence

Professor S M S Lee
BA, PhD Cantab
Bootstrap; Resampling Methods; Statistical Theory: Asymptotics and Applications

Dr E A L Li
BSc HK; MEng, PhD Syd
Real Option Theory and Applications; Resource Economics; Quantitative Trading; Quantum Computing, Blockchain and Smart Contracts

Professor G D Li
BSc, MSc Peking; PhD HK
Time Series Analysis; Financial Econometrics; Quantile Regression; High Dimensional Data Analysis; Machine Learning

Professor W Y Li
BSc, BEc, MEc SWUFE; PhD Waterloo
Actuarial Science; Insurance Economics; Mathematical Finance

Professor L Q Qu
BEng CSU; PhD UCAS; CityU
AI in Healthcare; Medical Image Processing; Illumination Modeling; Deep Learning

Professor C Wang
PhD NUS
Random Matrix Theory; Time Series Analysis; High-dimensional Data Analysis

Dr K P Wat
BSc(ActuSc), PhD HK; SFHEA; FSA; FASHK; CERA; FRM
Actuarial Science; Financial Mathematics; Insurance Risk Models; Financial Risk Analysis; Enterprise Risk Management

Professor L Q Yu
BEng ZJU; PhD CUHK
Medical Image Analysis; Machine Learning; Computer Vision; Clinical NLP; AI in Healthcare

Prof K C Yuen
BSc, MSc, PhD Calgary; ASA
Insurance Risk Modelling; Financial Risk Analysis; Survival Analysis

Professor C Y Zhang
PhD HK

Dr D Y Zhang
BSc Nankai; MSc, PhD NCSU
Big Data Analytics; Bayesian Methods; Biostatistics; Statistical Genetics; Bioinformatics; Public Health and Biomedical Research

Professor M M Y Zhang
BS UCSB; MS, PhD UT Austin
Machine Learning; Bayesian Non-parametrics; Scalable Inference

Dr Z Q Zhang
BSc Nankai; MSc E China Normal; PhD HK
Time Series Analysis; Extreme Value Theory; Insurance Risk Modelling; Machine Learning

Professor K Zhu
BSc USTC; PhD HKUST
Time Series Analysis; Econometrics; Causal Inference

Mr H Y Y Cheung
BSc UCL; MSc Imperial College London

Enquiries:



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<https://www.scifac.hku.hk/pg/prospective/tpg>

Master of Statistics

MStat

Statistics

Spatial Data Analysis

Advanced Knowledge

Social Network

Time Series Forecasting

Blockchain Data Analytics

Marketing Analytics

Practical Skills

Algorithmic Trading

Professional Views

Programme Highlights

- Be a knowledgeable statistician in principles and practice
- Experience hands-on applications of methodologies with powerful statistical software
- Could select electives from the Department's research postgraduate programme
- Join the programme of more than 30 years in curriculum development and delivery
- Select a theme of your interest (Risk Management / Data Analytics / Financial Statistics)

Target Students

The programme is ideal for:

Those who wish to advance their quantitative and analytical skills to prepare for a data-focused career path, and

those who wish to pursue further study in the field of statistics after studying science, social sciences, engineering, medical sciences, information systems, business and finance in their undergraduate studies.

Graduates' Career Prospects in Recent Years



Scholarships and Awards

- Entrance Scholarship for Master of Statistics**
Entrance scholarship for Master of Statistics of HK\$20,000 will be awarded annually to new MStat students on the basis of academic merit and financial need upon admission.
- Master of Statistics Outstanding Performance Scholarship**
One scholarship of HK\$50,000 will be awarded annually to MStat student on the basis of academic merit and quality of coursework.
- Lifelong Learning Prizes in Statistics**
Multiple Lifelong Learning Prizes in Statistics, each from HK\$5,000 to HK\$10,000, will be awarded to MStat students on the basis of academic achievement.
- Belt and Road Scholarship in Statistics and Data Science (Taught Postgraduate)*** NEW!
This scholarship is awarded annually to outstanding new students from participating Belt and Road countries. Composition fees of MStat could be waived for awardees, and additional allowance of HK\$10,000 will be provided to support their studies.



Targeted Taught Postgraduate Programmes Fellowship Schemes

The Master of Statistics programme is one of the eligible programmes under the University Grants Committee for Targeted Taught Postgraduate Programmes Fellowships Scheme. Each local applicant who is selected for the fellowships scheme will be granted an award of HK\$120,000.

Reimbursable Course(s) by Continuing Education Fund (CEF)*

The following courses have been included in the list of reimbursable courses under the CEF:

STAT6013	Financial Data Analysis NEW!
STAT7008	Programming for Data Science NEW!
STAT8003	Time Series Forecasting NEW!
STAT8007	Statistical methods in economics and finance
STAT8017	Data mining techniques
STAT8019	Marketing Analytics

All CEF applicants are required to attend at least 70% of the concerned courses before they are eligible for fee reimbursement under the CEF.

The mother programme (Master of Statistics) of these courses is recognised under the Qualifications Framework (QF Level 6).
* To be approved by the University.

Graduates Testimonial

Yiu Cheuk Wing *MStat Part-time Graduate 2023*
Statistician, Census and Statistics Department

I have worked in the field of official statistics for several years. The depth and breadth of the MStat program, both in its structure and content, are truly unique. The program provides a valuable platform to further my cutting-edge knowledge across diverse domains of Statistics. Its comprehensive curriculum strikes a very good balance between a strong theoretical foundation and practical programming training. This combination enhances my understanding of new methodologies and hands-on data analytical skills, which are advantageous for developing and organizing a wide range of statistical projects in my professional endeavors, particularly in rapidly evolving areas such as big data and machine learning.



Liu Wen *MStat Full-time Graduate 2023*
Actuarial Analyst, Ernst and Young

The esteemed MStat program has played an instrumental role in shaping my career. MStat program provided me with a comprehensive education in statistical theory and applications, which have been beneficial in my actuarial career. One of the standout features of the program was the exceptional professors who possess extensive knowledge and expertise in their respective fields. The program also provided numerous opportunities for hands-on experience through practical projects and internships, during the study, I applied for an EY internship position through our programme's internship/job online application system, interviewed, and received offer. I am immensely grateful for the exceptional education and experience I gained through MStat at HKU. It is a programme that I would highly recommend to anyone seeking a comprehensive and rigorous education in statistics.

Kim Bohyun *MStat Part-time Graduate 2020*
Associate, PIMCO Asia Limited

The Master of Statistics program is well designed to offer extensive training in theories and practice of statistics. It provides a wide range of courses from fundamentals of statistics to more theme-specific elective courses, such as data mining techniques and big data analytics. During my two-years' time at HKU, I was able to not only hone my knowledge in statistics but also gain exposure in programming languages such as Python, SAS, and R, which are essential skillsets in many industries. Most of the courses generally have a good balance between theories and practical applications. I would highly recommend this program to someone who would like to gain knowledge in the field of statistics and data science.



Programme Curriculum

For successful completion of the programme, student is required to complete a total of **60 credits** of courses in either **full-time study**, or **part-time study**. Students may choose to specify his/her theme of interests (Risk Management / Data Analytics / Financial Statistics) on transcript if requirement is satisfied. Student must obtain a cumulative GPA of at least 2.0 for graduation.

Two Compulsory Courses (12 credits)	STAT7101	Fundamentals of statistical inference (6 credits)	Students with prior background has to take a more advanced course from the same area as replacement:	
	STAT7102	Advanced statistical modelling (6 credits)	REPLACE... STAT7101 Fundamentals of statistical inference (6 credits) STAT7102 Advanced statistical modelling (6 credits)	WITH... STAT6009 Research methods in statistics (6 credits) OR STAT7005 Multivariate methods (6 credits) Any other course
+ Theme-specific Elective Courses (24 credits)	Risk Management		STAT6015 STAT6017 STAT7009 STAT8003 STAT8007 STAT8015 STAT8017 STAT8308	Advanced quantitative risk management (6 credits) Operational risk and insurance analytics (6 credits) Stochastic dependence modelling (6 credits) NEW! Time series forecasting (6 credits) Statistical methods in economics and finance (6 credits) Actuarial statistics (6 credits) Data mining techniques (6 credits) Blockchain data analytics (3 credits)
	Data Analytics		STAT6011 STAT6016 STAT7005 STAT7007 STAT8003 STAT8016 STAT8017 STAT8019 STAT8021 STAT8302 STAT8306	Computational statistics and Bayesian learning (6 credits) Spatial data analysis (6 credits) Multivariate methods (6 credits) Categorical data analysis (3 credits) Time series forecasting (6 credits) Biostatistics (6 credits) Data mining techniques (6 credits) Marketing analytics (6 credits) Big data analytics (6 credits) Structural equation modelling (3 credits) Statistical methods for network data (3 credits)
+ Other Elective Courses (18 credits)	Financial Statistics		STAT6013 STAT7009 STAT8003 STAT8007 STAT8015 STAT8017 STAT8020 STAT8021 STAT8309	Financial data analysis (6 credits) Stochastic dependence modelling (6 credits) NEW! Time series forecasting (6 credits) Statistical methods in economics and finance (6 credits) Actuarial statistics (6 credits) Data mining techniques (6 credits) Quantitative strategies and algorithmic trading (6 credits) Big data analytics (6 credits) Monte Carlo Simulation and Finance (3 credits) NEW!
			STAT6009 STAT6010 STAT6019 STAT7006 STAT7008 STAT8000 STAT8300	Research methods in statistics (6 credits) Advanced probability (6 credits) Current topics in statistics (6 credits) Design and analysis of sample surveys (6 credits) Programming for data science (6 credits) Workshop on spreadsheet modelling and database management (3 credits) Career development and communication workshop (Non-credit-bearing)
+ Capstone requirement (6 credits)			STAT8017 STAT8088 STAT8089	Data mining techniques (6 credits) Statistical practicum (6 credits) Capstone project (6 credits)

Total: 60 credits

Full-time (1 year) OR Part-time (2 years)

Remarks:
1. Apart from the two compulsory courses and capstone requirement, candidates may choose not to follow any theme and may take 42 credits of elective courses in any order, whenever feasible.
2. If a student selects a course whose contents are similar to a course (or courses) which he/she has taken in his/her previous study, the Department may not approve the selection in question.
3. The programme structure will be reviewed from time to time and is subject to change.

Programme Duration and Class Schedules

The programme extends over not less than one academic year for the full-time study, and not less than two academic years for the part-time study. Teaching will take place mostly in day-time from Monday to Saturday for courses having course codes STAT6XXX, and on weekday evenings, and Saturday mornings and afternoons for courses having course codes STAT7XXX or STAT8XXX. All lectures are conducted in English at HKU.

Optional Preparatory Courses

- Preparatory course in matrices and calculus for students who need to rejuvenate their mathematical skills (August, 2024)
- Preparatory course in Python provides a quick overview of the Python programming language (August, 2024)
- Review course on basic probability and statistics concepts to solidify students' conceptual understanding (August, 2024)
- Workshop in R covering data handling, graphics, mathematical functions and some basic statistical techniques (August, 2024)
- Workshop in SAS for students who need to rejuvenate their skills in data management using SAS (August, 2024)

Course Descriptions



<https://saasweb.hku.hk/programme/mstat-structure.php>