Master of Science (MSc) Program in Big Data Technology

Program Director:

Lei CHEN, Professor of Computer Science and Engineering

The Master of Science (MSc) program in Big Data Technologyaims to educate students about big data and issues related to big data. Students are expected to be familiar with the workflow of big data systems and social and societal implications of big data systems. Big data is poised to change the way enterprises function and a society operates, and is changing the way engineering and science is conducted. Jointly offered by the Department of Computer Science and Engineering and the Department of Mathematics, the program integrates different disciplines together to allow students to know all the important aspects of big data and how it is used in the real world.

Program Learning Outcomes

On successful completion of the program, graduates will be able to:

- Identify, explain, and use Big Data infrastructure;
- Solve Big Data integration and storage problems;
- Perform various data analytic tasks using Big Data management and computing techniques;
- Derive knowledge and strategies from Big Data analytics and apply them to privacy protection and policy making; and
- Investigate existing problems on Big Data and conduct original Big Data research.

Admission Requirements

Applicants must possess a bachelor's degree in Computer Engineering, Computer Science, Mathematics or a related field from a recognized university or tertiary institution. Applicants with a bachelor's degree in other disciplines must have relevant working experience in IT and Mathematics related fields.

Program Duration

The normal duration for program completion is one year in full-time mode and two years in part-time mode.

Program Fee

The program fee is HK$150,000. New students admitted with credit transfer are also required to pay the full program fee. Students who take additional courses or need to retake any courses are required to pay additional fee.

Curriculum

Students are required to complete 30 credits of coursework, including 12 credits of core courses and 18 credits of elective courses.

a) Core courses (12 credits)

MSBD 5001	Foundations of Data Analytics
MSBD 5002	Data Mining and Knowledge Discovery
MSBD 5003	Big Data Computing
MSBD 5004	Mathematical Methods for Data Analysis

b) Elective courses (18 credits)

MSBD 5005	Data Visualization
MSBD 5006	Quantitative Analysis of Financial Time Series
MSBD 5007	Optimization and Matrix Computation
MSBD 5008	Introduction to Social Computing
MSBD 5009	Parallel Programming
MSBD 5010	Image Processing and Analysis
MSBD 5011	Advanced Statistics: Theory and Applications
MSBD 5012	Machine Learning
MSBD 5013	Statistical Prediction
MSBD 5014	Independent Project

Subject to the approval of the Program Director, students may take a maximum of 6 credits of CSIT courses from the MSc program in Information Technology as partial fulfillment of the graduation requirements of the program.

Part-time students may take a maximum of 9 credits each term.

Credit Transfer

Credit transfer may be granted to students in recognition of studies completed successfully elsewhere. Upon the approval of the Program Director, a maximum of 9 credits can be transferred from other institutions to the program, subject to University regulations governing credit transfer for postgraduate programs.

Graduation Requirements

Students must complete the program with a graduation grade average (GGA) of 2.850 or above as required of all postgraduate students at the University. Students failing to meet the GGA requirement are required to repeat or take additional course(s) even if they attain passing grades for all courses.