THE HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY

The Master of Science (MSc)

Program in Data-Driven Modeling

ABOUT THE PROGRAM

The Master of Science (MSc) Program in Data-Driven Modeling is jointly offered by the Department of Physics and the Department of Mathematics. The program aims at training students with some science or engineering background who would like to prepare themselves for careers that require modeling skills based on information extracted from data.

Data-driven modeling is an essential skill in many sectors involving information technology, such as computer services, commerce, finance, and public services. Due to the phenomenal growth in the speed and memory size of computer hardware, the omnipresence of Internet, and the accessibility of powerful computational algorithms, there is a strong demand for human power in hardware, software, services, infrastructure, information, and digital business.

This program aims at training graduates to have strong skills in problem solving and logical thinking. These skills are essential for them to become competent in the data science sector. They will be trained to have hands-on experience in analyzing large amount of data, extract significant features from them, and hence provide valuable insights to understand complex situations and facilitate smart decision making for businesses, industries and services.

MESSAGE FROM PROGRAM DIRECTOR

This MSc DDM program bridges the gaps between theory, practice, and techniques. Join us, and let our Program be the gateway to your future success.

K. Y. Michael WONG
Program Director

CURRICULUM

For successful completion of the program, each student is required to complete a minimum 30 credits. Students attending the program have to take 15 credits of core courses and 15 credits of elective courses. Full-time students are expected to complete the program in 1 year (two regular terms: Fall and Spring), and 2 years for part-time students.

1. Core Courses

15 credits from the following list of courses:

MSDM 5001	Introduction to Computational and Modeling Tools	3 Credits
MSDM 5002	Scientific Programming and Visualization	3 Credits
MSDM 5003	Stochastic Processes and Applications	3 Credits
MSDM 5004	Numerical Methods and Modeling in Science	3 Credits
MSDM 5005	Innovation in Practice	3 Credits

2. Elective Courses

15 credits from the following list of courses:

MSDM 5051	Algorithm and Object-Oriented Programming for Modeling	3 Credits
MSDM 5053	Quantitative Analysis of Time Series	3 Credits
MSDM 5054	Statistical Machine Learning	3 Credits
MSDM 5056	Network Modeling	3 Credits
MSDM 5058	Information Science	3 Credits
MSDM 5059	Operations Research and Optimization	3 Credits
MSDM 6980	Computational Modeling and Simulation Project	3 Credits
PHYS 5120	Computational Energy Materials and Electronic Structure Simulations	3 Credits

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

CAREER PROSPECT AND JOB OPPORTUNITIES

Job opportunities can be found in many sectors involving information technology, such as computer services, commerce, finance, and public services. Non-local fresh graduates may apply to stay and work in Hong Kong under the Immigration Arrangements for Non-local Graduates (IANG). We will organize career workshops and provide assistance to students in writing curriculum vitae.

ADMISSION REQUIREMENT

To qualify for admission, applicants must meet all of the following requirements. Admission is selective and meeting these minimum requirements does not guarantee admission.

1 General Admission Requirements of the University

Applicants seeking admission to a master's degree program should have obtained a bachelor's degree from a recognized institution, or an approved equivalent qualification.

2 English Language Admission Requirements

Applicants have to fulfill English Language requirements with one of the following proficiency attainments:

TOEFL-iBT:	80
TOEFL-pBT:	550
TOEFL-Revised paper-delivered test:	60 (Total scores for Reading, Listening and Writing sections)
IELTS (Academic Module):	Overall score: 6.5 and All sub-score: 5.5

Applicants are not required to present TOEFL or IELTS score if:

- Their first language is English, or
- They obtained the bachelor's degree (or equivalent) from an institution where the medium of instruction was English.

3 Additional Information

A bachelor's degree in Science or Engineering disciplines, or

A bachelor's degree in other disciplines and:

- Have relevant working experience in computation-related fields, and
- Have working knowledge in at least one computer language, and basic training in calculus and linear algebra.

PROGRAM FEE

The program fee for 2021-22 intake is HK$ 180,000. The program fee covers tuition and course materials, is excluding books, computer equipment, software licensing, caution money, visa application, travelling and living expenses in Hong Kong, etc.

The program fee should be paid in the following instalments:

For Full-time Students

Upon confirmation of offer:	$ 45,000
By Fall term commencement date 2021-2022:	$ 45,000
By Spring term commencement date 2021-2022:	$ 90,000

For Part-time Students

Upon confirmation of offer:	$ 45,000
By Fall term commencement date 2021-2022:	$ 45,000
By Fall term commencement date 2022-2023:	$ 90,000

ENTRANCE SCHOLARSHIPS

All applicants will be considered for Admission Scholarships. No separate application is required. Selection is highly competitive and will be reviewed by the program administration.

WHEN AND HOW TO APPLY

Application Fee: HK$250

Application Deadlines for 2021/22 Fall Term Intake:

Study Mode	Non-local Applicants	Local Applicants
Full-time / Part-time	Round One: 1 Jan 2021 Round Two: 15 Mar 2021 Round Three: 15 May 2021	Round One: 1 Jan 2021 Round Two: 15 Mar 2021 Round Three: 1 Jun 2021

HKUST's online application for 2021/22 Fall Term admissions:
https://pg.ust.hk/prospective-students/admissions/

APPLY HERE

CONNECT WITH US

Have a question or want to know more?
We'd love to hear from you!