School of Data Science
數據科學學院

香港城市大學
City University of Hong Kong

Master of Science in Data Science (MSDS)
理學碩士（數據科學）

Student Handbook
2023-2024

(Please note that the information given in this Handbook is accurate at the time of printing in August 2023. Changes to the information may be made from time to time without prior notification.)

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Master of Science in Data Science

Student Handbook (2023-2024)

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August 2023

1. PROGRAMME AIMS

The programme aims to produce data-analytic graduates to meet the growing demand for high-level data science skills and to prepare graduates to apply data science techniques to knowledge discovery and dissemination in organisational decision-making. It is also intended to help data analytic professionals upgrade their technical management and development skills, and to provide a solid path for students from related quantitative fields to rapidly transition to data science careers.

Programme Intended Learning Outcomes (PILOs):

Upon successful completion of this Programme, students should be able to:

1. Apply knowledge of science and engineering appropriate to the data science discipline;
2. Understand the theoretical foundation of contemporary techniques and apply them for managing, mining and analysing data across multiple disciplines;
3. Comprehend computational tools and use data-driven thinking to discover new knowledge and to solve real-world problems with complex structures;
4. Recognise the need for and engage in continuous learning about emerging and innovative data science techniques and ideas;
5. Communicate ideas and findings in written, oral and visual forms and work in a diverse team environment.

2. PROGRAMME OF STUDY

Core Courses (15 CUs)

Course Code	Course Title	Level	Credit Units
SDSC5001	Statistical Machine Learning I	P5	3
SDSC5002	Exploratory Data Analysis and Visualization	P5	3
SDSC5003	Storing and Retrieving Data	P5	3
SDSC6001	Statistical Machine Learning II	P6	3
SDSC6002	Research Projects for Data Science	P6	3

Elective Courses (15 CUs)

Course Code	Course Title	Level	Credit Units
CS5285	Information Security for eCommerce	P5	3
CS5487	Machine Learning: Principles and Practice	P5	3
CS6290	Privacy-enhancing Technologies	P6	3
CS6493	Natural Language Processing	P6	3
SDSC6003	Bayesian Data Analysis	P6	3

SDSC6004	Data Analytics for Smart Cities	P6	3
SDSC6006	Dissertation	P6	6
SDSC6007	Dynamic Programming and Reinforcement Learning	P6	3
SDSC6008	Experimental Design and Regression	P6	3
SDSC6009	Machine Learning at Scale	P6	3
SDSC6011	Optimization for Data Science	P6	3
SDSC6012	Time Series and Recurrent Neural Networks	P6	3
SDSC6013	Topics in Financial Engineering and Technology	P6	3
SDSC6014	Networked Life and Data Science	P6	3
SDSC6015	Stochastic Optimization for Machine Learning	P6	3
SDSC6016	Predictive Analytics and Financial Applications	P6	3
SDSC8007	Deep Learning	R8	3
SDSC8008	Data-driven Operations Research	R8	3
SDSC8009	Data Mining And Knowledge Discovery	R8	3
SDSC8011	Social Foundations of Data Science	R8	3
SDSC8013	Statistical Methods in Categorical Data Analysis	R8	3
SDSC8014	Online Learning and Optimization	R8	3

Remarks: Programme electives will be offered subject to the availability of resources and sufficient enrolment.

3. ASSESSMENT AND AWARD CLASSIFICATIONS

Students should observe the University's related regulations and guidelines on assessment at all times. More information can be available by referring to the websites maintained by Chow Yei Ching School of Graduate Studies.

http://www.cityu.edu.hk/qac/assessment_policy/university_assessment_policy.htm

Commencing from the 2023/24 intake, students will be awarded the following classifications based on their CGPA attained upon completion of all appropriate graduation requirements.

Master's Degree	**CGPA**
Distinction	3.65 or above
Credit	3.30 – 3.64
Pass	2.85 – 3.29

4. TUITION FEES AND PROGRAMME DURATION

Tuition fees: HK$9,600 per credit (local students and non-local students)

Credits required: 30 CUs

Full-time students who are unsure whether they will take up SDSC6006 Dissertation (6 CUs) in Semester B and Summer Term, can study 15 CUs in semester A, i.e. 9 CUs core courses + 6 CUs elective courses.

Those who complete 15 CUs in Semester A can still register for 6 CUs of core courses + 3 CUs of elective courses and 6 CUs of Dissertation, giving a total of 30 CUs in Semester B and Summer Term. All the 30 CUs will be used to calculate the overall CGPA.

Duration of study:

Normal Period	Maximum Period
Full-time (1 year)	Full-time (2.5 years)
Part-time (2 years)	Part-time/ Combined mode (5 years)

5. CLASS SCHEDULE

Weekday evenings and Saturday afternoons (plus weekday daytime sessions if necessary).

6. ACADEMIC REGULATIONS AND GUIDELINES

Students should observe the University's academic regulations and guidelines at all times. More information can be available by referring to the websites maintained by the Chow Yei Ching School of Graduate Studies.

https://www.cityu.edu.hk/sgs/student/TPg/regulations

7. ACADEMIC HONESTY

Academic honesty is central to the conduct of academic work. Students are responsible for knowing and understanding the Rules on Academic Honesty. To enhance students' understanding of academic honesty, all students are required to complete a tutorial on academic honesty and make a declaration on their understanding of this core academic principle online on or before **30 November 2023** in order to access their course grades.

https://www.cityu.edu.hk/provost/academic_honesty/

8. COMMUNICATIONS

In general, students are encouraged to discuss freely any of their problems with the Programme Leaders, Year Tutors, Course Leaders and Instructors.

Specifically, the following communication channels between students and the department are recommended:

i) Students who are having academic difficulties with a course should speak directly to the Course Leader or Instructors of that course.

ii) A student who wishes to discuss issues on a particular part of the programme should speak to the Year Tutor.

iii) A student who wishes to discuss the overall organisation of the programme should speak to the Programme Leader or his/her deputy.

iv) A formal consultative process between students and staff exists in the department in the form of a Joint Staff & Student Consultative Committee (JSSCC). One student from each year will be elected to sit in the JSSCC Committee.

v) One part-time student from each year of the programme and two full-time students will be elected to sit in the Programme Committee.

9. PROGRAMME LEADER AND YEAR TUTORS

Position	Staff Name	Tel.	Email
Programme Leader	Professor Matthias TAN	3442-5651	matthtan@cityu.edu.hk
Deputy Programme Leader	Professor Li ZENG	3442 4381	lizeng@cityu.edu.hk
FT Year Tutor			
2023-2024 Cohort	Professor Matthias TAN	3442-5651	matthtan@cityu.edu.hk
PT Year Tutor			
2023-2024 Cohort	Professor Li ZENG	3442 4381	lizeng@cityu.edu.hk
Dissertation Tutor	Professor Li ZENG	3442 4381	lizeng@cityu.edu.hk

10. INFORMATION TO NEW STUDENTS

10.1 How to access your Personal Class Schedule

i) Go to ***https://www.cityu.edu.hk***, then click "**Quick Links**" at the top and select "**AIMS**".
ii) Log in to AIMS with your EID and password.
iii) Click "**Course Registration**" menu.
iv) Click "**Main Menu for Web Add/drop**".
v) Click "**My Detail Schedule**" and select the term to display details of your class schedule.

10.2 How to get Instructors’ handouts through Canvas

i) Go to ***https://www.cityu.edu.hk***, then click “**Quick Links**” at the top and select “**Canvas**”.
ii) Log in to Canvas with your EID and password.
iii) Click “**Courses**” on the left menu.

10.3 How to check Programme Requirements and Course Syllabus

Go to the **CityU home page** and select “**Programme and Course Catalogue**” under “**Academics**”, and then click “**Taught Postgraduate Programmes**”.

10.4 Course Registration for Semester A, 2023-2024

For Semester A, 2023-2024, students will be pre-registered in required courses and programme electives in most cases if possible.

i) The date for the release of your class schedule is **25 July 2023**. Please check your curriculum requirements, review your study plan and then make appropriate adjustments to your pre-registered courses.

ii) Add/Drop of courses can be made through AIMS for web-enabled courses during the web registration period. For non-web-enabled courses, approval is required from the offering department. You can submit your application for add/drop of non-web-enabled courses via AIMS.

How to do the Add/Drop:

- Go to ***https://www.cityu.edu.hk***, then click “**Quick Links**” at the top and select “**AIMS**”.
- Log in to AIMS with your EID and password.
- Click “**Course Registration**” menu.
- Click “**Main Menu for Web Add/drop**”.
- Click “**Add or Drop Classes**”, and you will find your pre-registered course sections under “**Current Schedule**”.

iii) Web registration begins on **28 August 2023**, but you need to check your time ticket first from AIMS.

iv) All add/drops end on **11 September 2023**.

v) Detailed arrangements on Course Registration for Semester A, 2023-2024 will be posted **in early August 2023**. For details, please refer to the SGS website: *https://www.cityu.edu.hk/sgs/student/tpg/coursereg/guide*.

10.5 How to access your Student Email Account

i) Go to ***https://www.cityu.edu.hk***, then click “**Quick Links**” at the top and select “**Email**”.
ii) On the Email Services home page, click “@**my.cityu.edu.hk**” under “**Student**” to go to CityU “M365 Sign-in page”.

iii) Click “**M365 Sign-in page**” and log in with your EID and password.
iv) You can read and compose mail after signing in.

Important note:

The CityU email account is the official means of communications at CityU. Students are responsible for checking their mails regularly and be responsive.

For email communication:
please state your ***student name, number and HK contact telephone number***.

10.6 How to check your Course Grade and GPA

i) Go to ***https://www.cityu.edu.hk***, then click “**Quick Links**” at the top and select “**AIMS**”.
ii) Log in to AIMS with your EID and password.
iii) Click “**Student Record**” menu.
iv) Click “**My Academic Record**”.
v) Click “**Grade Display**”.
vi) Select the programme and click “Go” to check your course grades.

10.7 Credit Transfer

Applications for credit transfer must be made before a semester begins. For Semester A, 2023-2024, the application period is from **13 July to 1 September 2023**. For details, please refer to the SGS website:
https://www.cityu.edu.hk/sgs/student/TPg/credittransfer

10.8 Administrative Support from General Office

Normal

Mon to Fri	9:00am - 12:30pm & 2:00pm - 5:30pm
Sat and public holidays	Closed

Inquiry:	3442-7887
Fax:	3442-0515
Email:	sdscgo@cityu.edu.hk

For Reference Only

Appendix I (a)

Model Study Path for MSDS 2023-2024 Entry without Dissertation (1 Year Full-time)

Yr.	Sem.	Courses					CUs
1	A	Statistical Machine Learning I (3CUs)	Exploratory Data Analysis and Visualization (3CUs)	Storing and Retrieving Data (3CUs)	Elective 1 (3CUs)	Elective 2 (3CUs)	15
	B	Statistical Machine Learning II (3CUs)	Research Projects for Data Science (3CUs)	Elective 3 (3CUs)	Elective 4 (3CUs)	Elective 5 (3CUs)	15

Total CUs = 30

Model Study Path for MSDS 2023-2024 Entry with Dissertation (1 Year Full-time)

- Students opting for the dissertation should work out his/her study path in consultation with the Year / Dissertation Tutor.

Yr.	Sem.	Courses					CUs
1	A	Statistical Machine Learning I (3CUs)	Exploratory Data Analysis and Visualization (3CUs)	Storing and Retrieving Data (3CUs)	Dissertation-1 (3CUs)	Elective 1 (3CUs)	15
	B	Statistical Machine Learning II (3CUs)	Research Projects for Data Science (3CUs)	Dissertation-2 (3CUs)	Elective 2 (3CUs)	Elective 3 (3CUs)	15

Total CUs = 30

For Reference Only

Appendix I (b)

Model Study Path for MSDS 2023-2024 Entry without Dissertation (1 Year Full-time, who wish to graduate in October)

Yr.	Sem.	Courses					CUs
1	A	Statistical Machine Learning I (3CUs)	Storing and Retrieving Data (3CUs)	Exploratory Data Analysis and Visualization (3CUs)	Elective 1 (3CUs)		12
	B	Statistical Machine Learning II (3CUs)	Elective 2 (3CUs)	Elective 3 (3CUs)	Elective 4 (3CUs)	Elective 5 (3CUs)	15
	S	Research Projects for Data Science (3CUs)					3

Total CUs = 30

Model Study Path for MSDS 2023-2024 Entry with Dissertation (1 Year Full-time, who wish to graduate in October)

- Students opting for the dissertation should work out his/her study path in consultation with the Year / Dissertation Tutor.

Yr.	Sem.	Courses				CUs
1	A	Statistical Machine Learning I (3CUs)	Storing and Retrieving Data (3CUs)	Exploratory Data Analysis and Visualization (3CUs)	Elective 1 (3CUs)	12
	B	Statistical Machine Learning II (3CUs)	Dissertation-1 (3CUs)	Elective 2 (3CUs)	Elective 3 (3CUs)	12
	S	Research Projects for Data Science (3CUs)	Dissertation-2 (3CUs)			6

Total CUs = 30

For Reference Only

Appendix II

Model Study Path for MSDS 2023-2024 Entry without Dissertation (2 Years Part-time)

Yr.	Sem.	Courses			CUs
1	A	Statistical Machine Learning I (3CUs)	Core Course (3CUs)	Elective 1 (3CUs)	9
	B	Statistical Machine Learning II (3CUs)	Elective 2 (3CUs)		6
2	A	Core Course (3CUs)	Elective 3 (3CUs)	Elective 4 (3CUs)	9
	B	Research Projects for Data Science (3CUs)	Elective 5 (3CUs)		6

Total CUs = 30

Model Study Path for MSDS 2023-2024 Entry with Dissertation (2 Years Part-time)

- Students opting for the dissertation should work out his/her study path in consultation with the Year / Dissertation Tutor.

Yr.	Sem.	Courses			CUs
1	A	Statistical Machine Learning I (3CUs)	Core Course (3CUs)	Elective 1 (3CUs)	9
	B	Statistical Machine Learning II (3CUs)	Elective 2 (3CUs)		6
2	A	Core Course (3CUs)	Dissertation-1 (3CUs)	Elective 3 (3CUs)	9
	B	Research Projects for Data Science (3CUs)	Dissertation-2 (3CUs)		6

Total CUs = 30

Notes

Notes