

Master of Science in Data Science

Student Handbook (2020-2021)

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1. PROGRAMME AIMS

Programme Aim:

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 theoretical foundation of contemporary techniques and apply them for managing, mining and analyzing 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. recognize 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	Units Worth
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	Units Worth
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 Panel Data	P6	3
SDSC6013	Topics in Financial Engineering and Technology	P6	3
SDSC6014	Networked Life and Data Science	P6	3
SDSC6015	Stochastic Optimization and Online Learning	P6	3
SDSC8011	Social Foundations of Data Science	R8	3
SDSC8013	Statistical Methods in Categorical Data Analysis	R8	3

Remark: Programme electives will be offered subject to availability of resources.

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 2010/11 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	3.50 or above
Credit	3.20 – 3.49
Pass	2.00 – 3.19

4. **TUITION FEES AND PROGRAMME DURATION**

Tuition fees : HK\$8,700 per credit (local students and non-local students)

Credits required : 30 CUs

Full time students who are not sure whether they will take up the MSc Dissertation (6 CUs) in Semester B, can study 15 CUs in semester A, i.e. 9 CUs core courses + 6 CUs elective courses.

For those who complete 15 CUs in Semester A, they can still register for 6 CUs 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. 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 Chow Yei Ching School of Graduate Studies.

<http://www.sgs.cityu.edu.hk/student/TPg/regulation>

6. 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 on 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 2020** in order to access their course grade.

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

7. COMMUNICATIONS

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

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 Lecturer of that course.
- ii) A student who wishes to discuss issues on a particular part of the programme should speak to the Year Tutors.
- iii) A student who wishes to discuss the overall organization 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.

8. **PROGRAMME LEADER AND YEAR TUTORS**

<u>Position</u>	<u>Staff Name</u>	<u>Tel.</u>	<u>Email</u>
Programme Leader	Dr Tan Hwai Yong Matthias	N/A	mathtan@cityu.edu.hk
Deputy Programme Leader	Dr Feng Long	3442-4037	longfeng@cityu.edu.hk
FT Year Tutor			
2020-2021 Cohort	Dr Tan Hwai Yong Matthias	N/A	mathtan@cityu.edu.hk
PT Year Tutors			
2020-2021 Cohort	Dr Feng Long	3442-4037	longfeng@cityu.edu.hk
Dissertation Tutor	Dr Feng Long	3442-4037	longfeng@cityu.edu.hk

9. **INFORMATION TO NEW STUDENTS**

9.1 **How to access your Personal Class Schedule**

- i) Go to <http://www.cityu.edu.hk>, then point to “Quick Links” at the top and click “AIMS”.
- ii) Log onto AIMS.
- iii) Click “Course Registration” menu.
- iv) Main menu for Web Add/drop.
- v) Click “My Detail Schedule” to display details of your class schedule.

9.2 **How to get Instructors’ handouts through Canvas**

- i) Go to <http://www.cityu.edu.hk>, then point to “Quick Links” at the top and click “Canvas”.
- ii) Click “Courses”.

9.3 How to check Programme Requirements and Course Syllabus

Go the CityU home page and click “Programme and Course Catalogue” under “Academic”.

9.4 Course Registration for Semester A 2020-2021

For Semester A 2020-2021, students will be pre-registered in required courses and programme electives in most cases if possible.

- i) The date for release of your class schedule is **28 July 2020**. 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 major department and you can submit your change request by using the Add/Drop Form.

How to do the Add/ Drop:

- Go to <http://www.cityu.edu.hk> and click “AIMS”.
- Login to AIMS with your EID and password.
- Select the Course Registration menu.
- 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 **24 August 2020** but you need to check your time ticket first from “AIMS”.
- iv) All add/drops end on **7 September 2020**.
- v) Detailed arrangements on Course Registration for Semester A 2020-2021 will be posted by **3 August 2020**. For details, please refer to SGS website: <http://www.sgs.cityu.edu.hk/student/tpg/coursereg> .

9.5 How to access your Student Email Account

- i) Go to <http://www.cityu.edu.hk>, then point to “Quick Links” at the top and click “Email”.
- ii) In the Email Service home page, click “@my.cityu.edu.hk” under “Student” to go to CityU “Microsoft 365 ” Sign In page.
- iii) At the M365 Sign-in page, please enter your CityU M365 account name in the format of “<EID>-c@my.cityu.edu.hk”, where your EID is your CityU Electronic ID.
- iv) Click [M365 Sign-in page] , logon your email account then click [Next] to enter your account password.
- v) Then you can read and compose mail after signing in.

Important note:

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

9.6 How to check your Course Grade and GPA

Go to <http://www.cityu.edu.hk>, then point to “**Quick Links**” at the top and click “**AIMS**” then Student Record - My academic record - Grade display - Select programme

9.7 Credit Transfer

Applications for credit transfer must be made before a semester begins. For Semester A 2020-2021, the application period is from **15 July to 29 August 2020**. For details, please refer to SGS website:

<http://www.sgs.cityu.edu.hk/student/TPg/record/credittransfer>

9.8 Administrative Support from General Office

Normal

Mon to Fri	9:00am to 5:30 pm
<i>Lunch Break</i>	<i>12:30pm to 1:45pm</i>
Sat	Closed
Inquiry:	3442-7887
Fax:	3442-0173
Email:	sdscgo@cityu.edu.hk

Model Study Path for MSDS 2020-2021 Entry without Dissertation (1 Year Full-time)

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

Total CU's = 30

Model Study Path for MSDS 2020-2021 Entry with Dissertation (1 Year Full-time)

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

Yr.	Sem.	Courses					CU's
1	A	Statistical Machine Learning I (3CU's)	Exploratory Data Analysis and Visualization (3CU's)	Storing and Retrieving Data (3CU's)	Elective 1 (3CU's)	Elective 2 (3CU's)	15
	B	Statistical Machine Learning II (3CU's)	Research Projects for Data Science (3CU's)	Elective 3 (3CU's)	Dissertation-1 (3CU's)		12
	S	Dissertation-2 (3CU's)					3

Total CU's = 30

Model Study Path for MSDS 2020-2021 Entry without Dissertation (2 Years Part-time)

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

Total CU's = 30**Model Study Path for MSDS 2020-2021 Entry with Dissertation (2 Years Part-time)**

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

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

Total CU's = 30

Model Study Path for MSDS 2020-2021 Entry without Dissertation (who wish to graduate in July)

Yr.	Sem.	Courses					CU's
1	A	Statistical Machine Learning I (3CUs)	Storing and Retrieving Data (3CUs)	Elective 1 (3CUs)	Elective 2 (3CUs)		12
	B	Statistical Machine Learning II (3CUs)	Exploratory Data Analysis and Visualization (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 2020-2021 Entry with Dissertation (who wish to graduate in July)**

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

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

Total CUs = 30