Master of Science in Data Science

PROGRAMME HANDBOOK
2024-2025

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This Programme Student Handbook is subject to periodic review and changes may be made when needed. Students will be informed of the changes as and when appropriate.

(Last update: 23 August 2024)

1. Programme Academic Calendar

MASTER OF SCIENCE IN DATA SCIENCE
ACADEMIC CALENDAR 2024-25

Term 1

Month	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Events	General Holidays
Aug 2024					1	2	3	21: Reporting & Registration Day 22-23: Pre-entry Course of Introduction to Computing 26-27: Pre-entry Course of Statistics 29: Briefing for Postgraduate Students 30: Orientation for DAI Students	
	4	5	6	7	8	9	10		
	11	12	13	14	15	16	17		
	18	19	20	21	22	23	24		
	25	26	27	28	29	30	31		
Sep 2024	1	2	3	4	5	6	7	2: Academic Year 2024-25 starts; Term 1 Classes Begin	18: The second day following the Chinese Mid-Autumn Festival
	8	9	10	11	12	13	14		
	15	16	17	18	19	20	21		
	22	23	24	25	26	27	28		
	29	30							
Oct 2024			1	2	3	4	5		1: National Day 11: Chung Yeung Festival
	6	7	8	9	10	11	12		
	13	14	15	16	17	18	19		
	20	21	22	23	24	25	26		
	27	28	29	30	31				
Nov 2024						1	2	28: Congregation (Classes Suspended)	
	3	4	5	6	7	8	9		
	10	11	12	13	14	15	16		
	17	18	19	20	21	22	23		
	24	25	26	27	28	29	30		
Dec 2024	1	2	3	4	5	6	7	4: Term 1 Classes End; Payment Deadline of Tuition Fee for Term 2 13-23: Term 1 Examinations 24: Reserved for Exams Postponed Due to Extenuating Circumstances	25: Christmas Day 26: The first weekday after Christmas Day
	8	9	10	11	12	13	14		
	15	16	17	18	19	20	21		
	22	23	24	25	26	27	28		
	29	30	31						

Term 2

Month	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Events	General Holidays
Jan 2025				1	2	3	4	10: Term 2 Classes Begin	1: The first day of January 27-31: Chinese New Year Holidays (students)
	5	6	7	8	9	10	11		
	12	13	14	15	16	17	18		
	19	20	21	22	23	24	25		
	26	27	28	29	30	31			
Feb 2025							1	20: Sports Day (Classes Suspended)	
	2	3	4	5	6	7	8		
	9	10	11	12	13	14	15		
	16	17	18	19	20	21	22		
	23	24	25	26	27	28			
Mar 2025				1	2	3	1		
	2	3	4	5	6	7	8		
	9	10	11	12	13	14	15		
	16	17	18	19	20	21	22		
	23	24	25	26	27	28	29		
	30	31							
Apr 2025			1	2	3	4	5	30: Term 2 Classes End	4: Ching Ming Festival 18: Good Friday 19: The day following Good Friday 21: Easter Monday
	6	7	8	9	10	11	12		
	13	14	15	16	17	18	19		
	20	21	22	23	24	25	26		
	27	28	29	30					
May 2025					1	2	3	6-13: Term 2 Examinations 14: Reserved for Exams Postponed Due to Extenuating Circumstance	1: Labour Day 5: The Birthday of the Buddha 31: Tuen Ng Festival
	4	5	6	7	8	9	10		
	11	12	13	14	15	16	17		
	18	19	20	21	22	23	24		
	25	26	27	28	29	30	31		

General Holidays
Important Dates for Students to Note
Examinations

2. Programme Information

2.1. Background

In today's increasingly data-driven world, there is a growing demand for skilled professionals who can effectively harness the power of data to drive informed decision-making, solve complex problems, and unlock valuable insights.

The Master of Science in Data Science (MScDS) is offered and managed by the Division of Artificial Intelligence, School of Data Science, Lingnan University. It is designed in a multidisciplinary fashion, which combines the applications of computer technology, operational research, statistical modelling with real-world problem solving. It covers the frontiers of knowledge in data science, with topics in new and emerging technologies such as (generative) AI and multimedia technologies (text, image, etc). Information regarding this full-time programme is given below.

Title in English: Master of Science in Data Science
Title in Chinese: 數據科學理學碩士課程
Normal study duration: One year

2.2. Aims and Programme Intended Learning Outcomes

2.2.1. Aims

The programme aims to:

- Foster students to explore and push the boundaries of data science, through developing approaches, algorithms, and solutions to address emerging challenges in real world.
- Encourage collaboration and integration of knowledge from various disciplines, leveraging insights from statistics, computer science, mathematics, and domain-specific domains (e.g., health, business, etc).
- Provide students with hands-on experience and real-world projects to develop skills that are directly applicable to industry and research settings.

2.2.2. Programme Intended Learning Outcomes (PILOs)

On completing the MScDS programme, students will be able to:

PILO1. Synthesize the knowledge and skills required to function effectively as artificial intelligence (AI) specialists, data science professionals, and entrepreneurs in the industry.

PILO2. Plan and effectively compare contemporary AI, data analytics and other Information Technology techniques for managing, mining, analyzing and visualizing data across multiple disciplines.

PILO3. Design, implement, deploy, and manage the solutions for real-world problems using industry-standard data science tools, programming languages, and software platforms.

PILO4. Develop critical thinking and problem-solving skills to identify appropriate

data science methods, tools, and algorithms for specific real-world problems and to evaluate their performance and limitations in different scenarios.

PILO5. Recognize the ethical and responsible use of data science methods and tools, including security, privacy, fairness, transparency, and accountability in data collection, analysis, and decision-making processes.

PILO6. Deliver the findings and communicate to stakeholders of a variety of diverse backgrounds.

2.3. Mode of Study

Full-time

2.4. Normal and Maximum Duration of Study

Mode of Study	Minimum Study Period	Maximum Study Period
Full-time	1 year	3 years

2.5. Medium of Instruction

The medium of instruction is English.

2.6. Contributing Departments/Units/External Partners

Division of Artificial Intelligence, School of Data Science

2.7. Programme Structure

2.7.1. Curriculum

Students are required to complete a total of thirty credits, consisting of six required courses and four elective courses, for the award of the MScDS degree. These courses can have different combinations of lectures, laboratory sessions, tutorials, and/or seminars. The normal duration for the MScDS programme is one year of full-time study. Students may extend the study period up to a maximum duration of three years, subject to the approval of the Programme Director and Person-in-Charge of the Division.

Course Code	Course Title	Credit
Core Courses		
CDS532	Programming for Data Science	3

CDS533	Statistics for Data Science	3
CDS534	Database Management	3
CDS535	Data Mining	3
CDS536	Data Science Project	3
CDS521	Foundation of Artificial intelligence	3
CDS524	Machine Learning for Business	3
Elective Courses (Choose any 3)		
CDS537	Introduction to Cyber Security	3
CDS538	Cloud Computing	3
CDS539	Natural Language Processing	3
CDS540	Computer Vision	3
CDS541	Operations Management	3
CDS542	Data Visualization	3
CDS543	Social Computing	3
CDS544	Mobile Edge Computing	3
CDS515	Business Decision Making with Software	3
CDS525	Practical Application of Deep Learning	3
CDS527	Big Data Analytics	3
CDS528	Blockchain	3
CDS530	Healthcare Analytics	3
SCI501	Geospatial Intelligence for Sustainable Development	3
	Total	**30**

2.7.2. List of Courses for 2024-25

Required Courses:

- CDS532 Programming for Data Science
- CDS533 Statistics for Data Science
- CDS534 Database Management
- CDS535 Data Mining
- CDS536 Data Science Project
- CDS521 Foundation of Artificial Intelligence
- CDS524 Machine Learning for Business

Elective Courses*:

- CDS525 Practical Application of Deep Learning
- CDS527 Big Data Analytics
- CDS528 Blockchain
- CDS530 Healthcare Analytics
- CDS540 Computer Vision

** Offering of the elective courses is subject to sufficient demand and faculty availability.*

2.7.3. Curriculum Mapping

	Programme Intended Learning Outcomes (PILOs)					
Required courses	**1**	**2**	**3**	**4**	**5**	**6**
CDS532 Programming for Data Science	✓	✓	✓	✓		
CDS533 Statistics for Data Science	✓	✓			✓	
CDS534 Database Management	✓	✓	✓			✓
CDS535 Data Mining	✓	✓	✓	✓		✓
CDS536 Data Science Project	✓	✓	✓	✓		✓
CDS521 Foundation of Artificial Intelligence	✓	✓	✓		✓	✓
CDS524 Machine Learning for Business	✓		✓	✓		✓
Elective Courses						
CDS537 Introduction to Cyber Security			✓		✓	✓
CDS538 Cloud Computing		✓	✓		✓	
CDS539 Natural Language Processing		✓		✓		✓
CDS540 Computer Vision		✓		✓		✓
CDS541 Operations Management		✓		✓		
CDS542 Data Visualization	✓	✓	✓			
CDS543 Social Computing			✓	✓		
CDS544 Mobile Edge Computing			✓	✓		
CDS515 Business Decision Making with Software			✓	✓		
CDS525 Practical Application of Deep Learning		✓	✓	✓		✓
CDS527 Big Data Analytics			✓	✓		✓
CDS528 Blockchain	✓		✓	✓	✓	
CDS530 Healthcare Analytics			✓	✓		✓
SCI501 Geospatial Intelligence for Sustainable Development			✓	✓	✓	✓

2.8. Student Progression Requirements

2.8.1 Minimum CGPA requirement for progression of this programme is 2.50 out of 4.0.

2.8.2 A student should be subject to an academic review at the end of each term generally. In the case where a student enrolled in less than 6 credits in a term, the academic review

shall be done when he/she has cumulatively enrolled in 6 credits or more.

2.8.3 Students who failed to meet to minimum CGPA requirement for progression would be closely considered by the Programme on their academic quality or standard, to see if a chance of continuation, i.e. putting the students on academic probation; or discontinuation of studies from the programme would be recommended to the Postgraduate Studies Committee for consideration.

2.8.4 At the end of the term in which the student on academic probation has cumulatively enrolled in 6 or more credits, if he/she obtains a Cumulative GPA of 2.50 or above, probation will be lifted. Otherwise, his/her studies will be discontinued.

2.8.5 A student may be put on academic probation for only one time during his/her whole period of study on the programme. After the academic probation is lifted and the student continues on the programme, the student will be discontinued from his/her studies if his/her Cumulative GPA is below 2.50 at an academic review.

2.8.6 A warning concerning the need to improve his/her academic performance should be issued to a student whose Cumulative GPA is at or above the level required for progression but below the level for graduation. The warning should be sent to a student whose Cumulative GPA is at or above 2.33 but below 2.67 (which is the minimum required for graduation).

2.9. Graduation Requirements

2.9.1. A student will be evaluated for graduation at the conclusion of the term in which he/she may satisfy all the conditions for an award. If a student is not allowed to graduate, he/she will be re-evaluated for graduation at the end of subsequent terms.

2.9.2. The student should have fulfilled all graduation requirements stipulated in the curriculum of his/her programme. The University reserves the right to make amendments to academic programmes from time to time as approved by the Senate.

2.9.3. For graduation, students are required to complete a total of 10 courses of 30 credits as specified in the programme curriculum, including 7 required courses and 3 elective courses.

2.9.4. The cumulative grade point average that a student should have obtained for graduation shall not be below 2.67.

2.9.5. If a student was admitted to the programme with an English test score just below the minimum as specified in Section 3.2 of the Regulations Governing Taught Master's Degree Programmes, the student is required to fulfil an exit requirement on English language competency before graduation.

2.9.6. A student is required to graduate as soon as he/she satisfies all the conditions for an award.

2.9.7. A student may graduate upon completion of all requirements at the end of any term in an academic year.

2.9.8. A student's eligibility for graduation is subject to Senate approval.

2.10. Award Classification

2.10.1 A student who has fulfilled all the requirements for graduation will be awarded a MSc degree with one of the following classifications:

Degree Classification	Minimum Cumulative G.P.A. Required
Distinction	3.50
Pass	2.67

2.10.2 These classifications are given according to the student's Cumulative G.P.A.

2.11. Intermediate Award

2.11.1 Students will be awarded a Postgraduate Diploma in Data Science ((數據科學深造文憑) if they complete any four required courses with a minimum Cumulative GPA of 2.33.

2.11.2 Acceptance of an intermediate award implies an intention not to complete the final award. Where students seek re-admission to complete the award, readmission cannot be guaranteed. Where students are readmitted and go on to complete the award, their transcripts will indicate that the intermediate award has been superseded.

2.12. Degree Conferment Date

Awards of this programme will be conferred on 31 March, 31 August or 15 November in each academic year. Students shall be invited to indicate their preferred degree conferment date.

2.13. Early Alert System

To enhance support for a student with potential study problems, the Programme Curriculum Committee (PCC) of the programme will give an early warning/advice to the student or may

have a special consideration for the student's chance of study continuation, which depends on the conditions specified below.

- If a student's Cumulative G.P.A. is equal to or greater than 2.50 but smaller than 2.67, then the PCC of the MScDS Programme will give an early warning/advice to the student.
- If a student's Cumulative G.P.A. is smaller than 2.50 but equal to or greater than 2.33 (equivalent to "C+"), then the PCC of the MScDS Programme may have a special consideration for the student's chance of study continuation. Here, the cumulative G.P.A. of 2.33 is regarded as the minimum Cumulative G.P.A. threshold for special consideration for a chance of continuation.
- If the student satisfies the Cumulative G.P.A. requirement for special consideration, then the student can apply for an interview to be conducted by the Programme Director, who will closely consider the student's eligibility for continuation and then report their recommendation to the Board of Examiners for the MScDS Programme. The Board of Examiners will make a decision on the marginal case and report their thinking and decision to the University's Postgraduate Studies Committee (PSC) for information, or make recommendations on the marginal case for special consideration by the PSC for a chance of continuation. If approved by the PSC, the student who is given a chance of continuation will be put on academic probation in the following term, the academic probation will be lifted if he/she obtains a cumulative GPA of 2.5 or above.

2.14. Scholarships

Scholarships might be considered for outstanding students on the basis of academic merit. All students admitted to the programme will automatically be the candidates for the scholarships. No application is required.

2.15. Official Communication Channel

Email is the official communication channel in Lingnan University. Students should use their Lingnan student email account to exchange messages with members of the University.

2.16. Programme Contact Information

Staff and Contacts of MScDS Programme Office

Name (Post)	Telephone	Office	Email

Prof. SHEN Jiaxing (Programme Director)	2616 8377	AD105/6	jiaxingshen@ln.edu.hk
Ms. LIAO Carmen (Senior Programme Officer)	2616 8096	AD105	jiaminliao@ln.edu.hk
Ms. WANG Hanqi (Programme Officer)	2616 8090	AD105	hannahwang@ln.edu.hk
Mr. HE Harry (Assistant Teaching Officer)	-	AD105	yugaohe@ln.edu.hk