Data Science, Analytics, and Artificial Intelligence

This section presents the requirements for programs in:

- M.A.Sc. Data Science, Analytics, and Artificial Intelligence
- M.C.S. Data Science, Analytics, and Artificial Intelligence
- M.Eng. Data Science, Analytics, and Artificial Intelligence
- M.I.T. Data Science, Analytics, and Artificial Intelligence
- M.Sc. Data Science, Analytics, and Artificial Intelligence
- Ph.D. Data Science, Analytics, and Artificial Intelligence

M.A.Sc. Data Science, Analytics, and Artificial Intelligence (5.0 credits)

M.A.Sc. Data Science, Analytics, and Artificial Intelligence - Thesis pathway (5.0 credits)

1. 1.0 credit in:		1.0
DATA 5000 [0.5]	Data Science Seminar	
DATA 5001 [0.5]	Fundamentals in Data Science and Analytics	
	ved SYSC electives (see DSAAI st of applicable electives)	0.5
	ved electives not in SYSC (see te for list of applicable electives)	0.5
4. 0.5 credit in electiv	e from any participating DSAAI unit	0.5
applications of artific	above electives must be in sial intelligence or machine program website for list of	
5. 2.5 credits in:		2.5
DATA 5929 [2.5]	Thesis - MASc	

Total Credits

M.C.S. Data Science, Analytics, and Artificial Intelligence (5.0 credits)

M.C.S. Data Science, Analytics, and Artificial Intelligence - Thesis pathway (5.0 credits)

1. 1.0 credit in:		1.0
DATA 5000 [0.5]	Data Science Seminar	
DATA 5001 [0.5]	Fundamentals in Data Science and Analytics	
	ved COMP electives (see DSAAI st of applicable electives)	0.5
	ved electives not in COMP (see ite for list of applicable electives)	0.5
4. 0.5 credit in election	ve from any participating DSAAI unit	0.5
applications of artific	ove electives must be in cial intelligence or machine program website for list)	
6. 2.5 credits in:		2.5

DATA 5939 [2.5]	Thesis - MCS
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5.0

DATA 5939 [2.5]	Thesis - MCS	
Total Credits		5.0
M.Eng. Data Scie Intelligence (4.5	ence, Analytics, and Artificial credits)	
	e, Analytics, and Artificial ework pathway (4.5 credits)	
1. 1.0 credit in:		1.0
DATA 5000 [0.5]	Data Science Seminar	
DATA 5001 [0.5]	Fundamentals in Data Science and Analytics	
	oved SYSC electives (see DSAAI ist of applicable electives)	1.0
3. 0.5 credit in any g	graduate-level SYSC course	0.5
	oved electives from two units not in ogram website for list of applicable	1.0
 1.0 credit in elect unit 	ives from any participating DSAAI	1.0
application of artific	n above electives must be in ial intelligence or machine I program website for list of)	
Total Credits		4.5
•	e, Analytics, and Artificial t pathway (4.5 credits)	
1. 1.0 credit in:	,	1.0
DATA 5000 [0.5]	Data Science Seminar	
DATA 5001 [0.5]	Fundamentals in Data Science and Analytics	
	oved SYSC electives (see DSAAI ist of applicable electives)	1.0
	oved electives from two units not in ogram website for list of applicable	1.0
4. 0.5 credit in elect	ive from any participating DSAAI unit	0.5
Note: 0.5 credit from	a above electives must be in	

2. 1.0 cre program w 3. 1.0 cre SYSC (se electives) 4. 0.5 cre Note: 0.5 credit from above electives must be in applications of artificial intelligence and machine learning (see DSAAI program website for list of applicable electives) 5. 1.0 credit in: 1.0

DATA 5928 [1.0]	Project - MEng	
Total Credits		4.5

M.I.T. Data Science, Analytics, and Artificial Intelligence (5.0 credits)

M.I.T. Data Science, Analytics, and Artificial Intelligence - Thesis pathway (5.0 credits)

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1. 1.0 credit in:		1.0
DATA 5000 [0.5]	Data Science Seminar	
DATA 5001 [0.5]	Fundamentals in Data Science and Analytics	
	ved ITEC electives (see DSAAI st of applicable electives)	0.5
	ved electives not in ITEC (see ite for list of applicable electives)	0.5
4. 0.5 credit in election	ve from any participating DSAAI unit	0.5

applicable electives 5. 2.5 credits in:	,	2.5
DATA 5919 [2.5]	Thesis - MIT	
Total Credits		5.0
M.I.T. Data Science,	Analytics, and Artificial t pathway (5.0 credits)	
1. 1.0 credit in:		1.0
DATA 5000 [0.5]	Data Science Seminar	
DATA 5001 [0.5]	Fundamentals in Data Science and Analytics	
	oved ITEC electives (see DSAAI ist of applicable electives)	1.0
	oved electives from two units not in gram website for list of applicable	1.0
4. 0.5 credit in election	ive from any participating DSAAI unit	0.5
applications of artifi	n above electives must be in cial intelligence or machine I program website for list of)	
5. 1.5 credits in:		1.5
DATA 5918 [1.5]	Project - MIT	
Total Credits		5.0
	Analytics, and Artificial ework pathway (5.0 credits)	1.0
DATA 5000 [0.5]	Data Science Seminar	
DATA 5001 [0.5]	Fundamentals in Data Science and Analytics	
program website for li	roved ITEC electives (see DSAAI ist of applicable electives)	2.0
program website for li 3. 1.0 credit in appro ITEC (see DSAAI pro		2.0 1.0
program website for li 3. 1.0 credit in appro ITEC (see DSAAI pro electives)	ist of applicable electives) oved electives from two units not in	
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program website for li 3. 1.0 credit in appro- ITEC (see DSAAI pro- electives) 4. 1.0 credit in election unit Note: 0.5 credit from applications of artifi learning (see DSAAI applicable electives Total Credits M.Sc. Data Scienter Intelligence (5.0 M.Sc. Data Science, Intelligence - Thesis 1. 1.0 credit in:	ist of applicable electives) by ed electives from two units not in gram website for list of applicable ives from any participating DSAAI a above electives must be in cial intelligence or machine program website for list of) hace, Analytics, and Artificial credits) Analytics and Artificial pathway (5.0 credits)	1.0
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program website for li 3. 1.0 credit in appro- ITEC (see DSAAI pro- electives) 4. 1.0 credit in electi- unit Note: 0.5 credit from applications of artifi- learning (see DSAAI applicable electives Total Credits M.Sc. Data Science , Intelligence (5.0 M.Sc. Data Science , Intelligence - Thesis 1. 1.0 credit in: DATA 5000 [0.5] DATA 5001 [0.5] 2. 0.5 credit in appro-	ist of applicable electives) by ed electives from two units not in gram website for list of applicable ives from any participating DSAAI above electives must be in cial intelligence or machine program website for list of program website for list of program vebsite for list of Data Science Seminar Fundamentals in Data Science and Analytics poed STAT elective (see DSAAI	1.0 1.0 5.0
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	n above electives must be in icial intelligence or machine I program website for list of)	
5. 2.5 credits in:	7	2.5
DATA 5909 [2.5]	Thesis - MSc	
Total Credits		5.0
	Analytics, and Artificial t pathway (5.0 credits)	
1. 1.0 credit in:		1.(
DATA 5000 [0.5] DATA 5001 [0.5]	Data Science Seminar Fundamentals in Data Science and	
0 4 0 14 1	Analytics	
	oved STAT electives (see DSAAI ist of applicable electives)	1.(
	oved electives from two units not in ogram website for list of applicable	1.(
4. 0.5 credit in elect	ive from any participating DSAAI unit	0.5
applications of artifi	n above electives must be in icial intelligence or machine I program website for list of)	
5. 1.5 credits in:		1.5
DATA 5908 [1.5]	Project - MSc	
	Analytics and Artificial	
Intelligence - Cours	ework pathway (5.0 credits)	
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1. 1.0 credit in: DATA 5000 [0.5]	ework pathway (5.0 credits) Data Science Seminar	1.(
1. 1.0 credit in: DATA 5000 [0.5] DATA 5001 [0.5]	ework pathway (5.0 credits) Data Science Seminar Fundamentals in Data Science and Analytics	
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Admission

M.A.Sc.

The normal requirement for admission to the M.A.Sc. Data Science, Analytics, and Artificial Intelligence is a bachelor's degree in electrical engineering, software engineering, computer systems engineering, or a related discipline with an average of at least B+.

M.C.S.

The normal requirement for admission to the M.C.S. Data Science, Analytics and Artificial Intelligence is an honours bachelor's degree in computer science or equivalent with an average of at least B+. An equivalent degree would include at least twelve computer science half-credits, two of which must be at the 4000-level, and eight half-credits in mathematics, one of which must be at the 3000- or 4000-level.

M.Eng.

The normal requirement for admission to the M.Eng. Data Science and Analytics is a bachelor's degree in electrical engineering, software engineering, computer systems engineering, or a related discipline with an average of at least B+.

M.I.T.

The normal requirement for admission to the M.I.T. Data Science, Analytics, and Artificial Intelligence is an undergraduate degree in information technology, computer science, computer systems engineering, electrical engineering, arts, humanities, psychology, communication and business, or a related discipline with an average of at least B+, and intermediate programming skills.

M.Sc.

The normal requirement for admission to the M.Sc. Data Science, Analytics, and Artificial Intelligence is an honours bachelor's degree in mathematics, statistics or the equivalent, with an average of B+ or higher in the honours subject and B- or higher overall.

Regulations

See the General Regulations section of this Calendar.

Regularly Scheduled Break

For immigration purposes, the summer term (May to August) for master's programs in Data Science, Analytics, and Artificial Intelligence is considered a regularly scheduled break approved by the University. Students should resume full-time studies in September.

Note: a Regularly Scheduled Break as described for immigration purposes does not supersede the requirement for continuous registration in Thesis, Research Essay, or Independent Research Project as described in Section 8.2 of the Graduate General Regulations.

Data Science (DATA) Courses

DATA 5000 [0.5 credit] Data Science Seminar

Cloud based distributed systems, statistics, machine learning, use of complex ecosystems of tools and platforms, data ethics, and communication skills to explain advanced analytics. Students choose a project in Big Data management and/or analysis, deliver a paper and give a class presentation on their findings.

DATA 5001 [0.5 credit]

Fundamentals in Data Science and Analytics

Ethics in Data Science and Analytics, visualization and knowledge discovery in massive datasets; unsupervised learning: clustering algorithms; dimension reduction; supervised learning: pattern recognition, smoothing techniques, classification.

Precludes additional credit for STAT 5703.

DATA 5002 [0.5 credit] Data Science, Ethics & Society

The ethical, social, political, and environmental implications of data science including the roles and responsibilities of data scientists in contemporary and emerging technological systems and the impact these systems may have at multiple scales, individual, group, institution, across sectors and nation-states. Includes: Experiential Learning Activity Also listed as COMS 5225. Precludes additional credit for COMS 5225, ITEC 5206.

DATA 5900 [0.5 credit]

Special Topics in Data Science Special topics, not covered by other graduate courses. Details will be available at the time of registration.

DATA 5908 [1.5 credit] Project - MSc

DATA 5909 [2.5 credits] Thesis - MSc

DATA 5918 [1.5 credit] Project - MIT

DATA 5919 [2.5 credits] Thesis - MIT

DATA 5928 [1.0 credit] Project - MEng DATA 5929 [2.5 credits] Thesis - MASc

DATA 5939 [2.5 credits] Thesis - MCS

DATA 6909 [0.0 credit] Thesis - PhD