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	
2 . pr	0.5 credit in approvogram website for list	ved SYSC electives (see DSAAI st of applicable electives)	0.5
3. D:	0.5 credit in approv SAAI program websi	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
Note: 0.5 credit from above electives must be in applications of artificial intelligence or machine learning (see DSAAI program website for list of applicable electives)			
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 c	redit in:		1.0
DATA	5000 [0.5]	Data Science Seminar	
DATA	5001 [0.5]	Fundamentals in Data Science and Analytics	
2. 0.5 c program	redit in approverse website for lis	ved COMP electives (see DSAAI t of applicable electives)	0.5
3. 0.5 credit in approved electives not in COMP (see DSAAI program website for list of applicable electives)			0.5
4. 0.5 c	redit in electiv	e from any participating DSAAI unit	0.5
5. 0.5 credit from above electives must be in applications of artificial intelligence or machine learning (See DSAAI program website for list)			
6. 2.5 c	redits in:		2.5

DATA 5939 [2.5]	Thesis - MCS
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Total Credits

ance Analytics and Artificial

5.0

M.Eng. Data Science, Analytics, and Artificial Intelligence (4.5 credits) M.Eng. Data Science, Analytics, and Artificial Intelligence - Coursework 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 2. 1.0 credit in approved SYSC electives (see DSAAI 1.0 program website for list of applicable electives) 3. 0.5 credit in any graduate-level SYSC course 0.5 4. 1.0 credit in approved electives from two units not in 1.0 SYSC (see DSAAI program website for list of applicable electives) 5. 1.0 credit in electives from any participating DSAAI 1.0 unit Note: 0.5 credit from above electives must be in application of artificial intelligence or machine learning (see DSAAI program website for list of applicable electives) **Total Credits** 4.5

M.Eng. Data Science, Analytics, and Artificial Intelligence - Project 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	
2. 1.0 credit in approprogram website for li	oved SYSC electives (see DSAAI st of applicable electives)	1.0
J. 1.0 credit in approved electives from two units not in SYSC (see DSAAI program website for list of applicable electives)		1.0
4. 0.5 credit in electi	ve from any participating DSAAI unit	0.5
applications of artificial intelligence and machine learning (see DSAAI program website for list of applicable electives)		
applicable electives)		1.0
applicable electives) 5. 1.0 credit in:) Decisión MEntre	1.0
applicable electives) 5. 1.0 credit in: DATA 5928 [1.0]	Project - MEng	1.0
applicable electives) 5. 1.0 credit in: DATA 5928 [1.0] Total Credits	Project - MEng	1.0 4.5
applicable electives) 5. 1.0 credit in: DATA 5928 [1.0] Total Credits M.I.T. Data Scien Intelligence (5.0	Project - MEng ce, Analytics, and Artificial credits)	1.0 4.5
applicable electives) 5. 1.0 credit in: DATA 5928 [1.0] Total Credits M.I.T. Data Scient Intelligence (5.0 M.I.T. Data Science, J Intelligence - Thesis	Project - MEng ce, Analytics, and Artificial credits) Analytics, and Artificial pathway (5.0 credits)	1.0 4.5
applicable electives) 5. 1.0 credit in: DATA 5928 [1.0] Total Credits M.I.T. Data Sciene Intelligence (5.0 M.I.T. Data Science, Intelligence - Thesis 1. 1.0 credit in:	Project - MEng ce, Analytics, and Artificial credits) Analytics, and Artificial pathway (5.0 credits)	1.0 4.5 1.0
applicable electives) 5. 1.0 credit in: DATA 5928 [1.0] Total Credits M.I.T. Data Sciene Intelligence (5.0 M.I.T. Data Science, , Intelligence - Thesis 1. 1.0 credit in: DATA 5000 [0.5]	Project - MEng ce, Analytics, and Artificial credits) Analytics, and Artificial pathway (5.0 credits) Data Science Seminar	1.0 4.5 1.0
applicable electives) 5. 1.0 credit in: DATA 5928 [1.0] Total Credits M.I.T. Data Sciene Intelligence (5.0) M.I.T. Data Science, , Intelligence - Thesis 1. 1.0 credit in: DATA 5000 [0.5] DATA 5001 [0.5]	Project - MEng ce, Analytics, and Artificial credits) Analytics, and Artificial pathway (5.0 credits) Data Science Seminar Fundamentals in Data Science and Analytics	1.0 4.5 1.0

	Analytics	
	2. 0.5 credit in approved ITEC electives (see DSAAI program website for list of applicable electives)	0.5
3. 0.5 credit in approved electives not in ITEC (see DSAAI program website for list of applicable electives)		0.5
	4 0 5 aredit in alactive from any participating DCAAL unit	0 5

4. 0.5 credit in elective from any participating DSAAI unit 0.5

5.0

Note: 0.5 credit from applications of artifi learning (see DSAAI applicable electives)	a above electives must be in cial intelligence or machine program website for list of	
5. 2.5 credits in:		2.5
DATA 5919 [2.5]	Thesis - MIT	
Total Credits		5.0
M.I.T. Data Science, Intelligence - Project	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	
 1.0 credit in appropriate program website for li 	oved ITEC electives (see DSAAI st of applicable electives)	1.0
3. 1.0 credit in approved electives from two units not in ITEC (see DSAAI program website for list of applicable electives)		
4. 0.5 credit in elective from any participating DSAAI unit Note: 0.5 credit from above electives must be in applications of artificial intelligence or machine learning (see DSAAI program website for list of applicable electives)		
5. 1.5 credits in:		1.5
DATA 5918 [1.5]	Project - MIT	
Total Credits		5.0
M.I.T. Data Science, Intelligence - Course	Analytics, and Artificial swork pathway (5.0 credits)	4.0
1. 1.0 credit in:	Data Calance Cominer	1.0
DATA 5000 [0.5]	Eurodemontole in Data Science and	
DATA 5001 [0.5]	Analytics	
2. 2.0 credits in approved ITEC electives (see DSAAI program website for list of applicable electives)		
3. 1.0 credit in approved electives from two units not in ITEC (see DSAAI program website for list of applicable electives)		
4. 1.0 credit in electives from any participating DSAAI		1.0
Note: 0.5 credit from applications of artifi learning (see DSAAI applicable electives)	a above electives must be in cial intelligence or machine program website for list of	
Total Credits		5.0
M.Sc. Data Scier Intelligence (5.0	nce, Analytics, and Artificial credits)	
M.Sc. Data Science, Intelligence - Thesis	Analytics and Artificial pathway (5.0 credits)	
1. 1.0 credit in:		1.0
DATA 5000 [0.5] DATA 5001 [0.5]	Data Science Seminar Fundamentals in Data Science and	
2. 0.5 credit in appro	Analytics oved STAT elective (see DSAAI	0.5
program website for list of applicable electives) 3. 0.5 credit in approved electives not in STAT (see		0.5
DSAAI program website for list of applicable electives)4. 0.5 credit in elective from any participating DSAAI unit		0.5

Note: 0.5 credit from applications of artifi learning (see DSAAI applicable electives)	a above electives must be in cial intelligence or machine program website for list of	
5. 2.5 credits in:		2.5
DATA 5909 [2.5]	Thesis - MSc	
Total Credits		5.0
M.Sc. Data Science, Intelligence - Projec	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	
2. 1.0 credit in appro program website for li	oved STAT electives (see DSAAI st of applicable electives)	1.0
3. 1.0 credit in approved electives from two units not in STAT (see DSAAI program website for list of applicable electives)		
4. 0.5 credit in electi	ve from any participating DSAAI unit	0.5
Note: 0.5 credit from applications of artifi learning (see DSAAI applicable electives)	a above electives must be in cial intelligence or machine program website for list of	
5. 1.5 credits in:		1.5
DATA 5908 [1.5]	Project - MSc	
Total Credits		5.0
M.Sc. Data Science, Intelligence - Course	Analytics and Artificial ework 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	
2. 2.0 credits in approved STAT electives (see DSAAI program website for list of applicable electives)		2.0
3. 1.0 credit in approved electives from two units not in STAT (see DSAAI program website for list of applicable electives)		1.0
4. 1.0 credit in electi	ve from any participating DSAAI unit	1.0
Note: 0.5 credit from applications of artifi learning (see DSAAI applicable electives)	a above electives must be in cial intelligence or machine program website for list of	
Total Credits		5.0
Ph.D. Data Scier Intelligence (1.5	nce, Analytics, and Artificial credits)	
1 0.5 crodit in:	ieuits).	0 5
	Eundomontals in Data Science and	0.5
DATA 5001 [0.5]	Analytics	
2. 1.0 credit in elective, approved by supervisor (see DSAAI program website for list of applicable elective		1.0
3. 0.0 credit in Com	prehensive Exam	
4. 0.0 credit in Thesis Proposal		
5. 0.0 credit in:		0.0
DATA 6909 [0.0]	Thesis - PhD	
Total Credits		1.5

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.

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