



MMAI

Master of Management in
Artificial Intelligence

2020-2021

Academic Handbook



Student Services & International Relations
studentservices@schulich.yorku.ca
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Can't find what you're looking for? Check the Graduate Academic Handbook!



Review important information about:

- tuition and fees
- scholarships and financial aid
- exams, grades and conduct
- petitions and appeals
- student services and enrolment
- student life and clubs
- libraries, transit, childcare, health services

Available on the [Current Graduate Students webpage](#) under "Quick Links"

Disclaimer

The material contained in this Handbook has been submitted by the administrative departments and academic units concerned. All general information and course references have been checked for accuracy as much as possible. If errors or inconsistencies do occur, please bring these to the attention of the responsible department. York University reserves the right to make changes to the information contained in this publication without prior notice.

It is the responsibility of all students to familiarize themselves each year with the information contained in this handbook, as well as with any additional regulations relating to academic policy as communicated by the Division of Student Services and International Relations in the Schulich School of Business.

It is the responsibility of all students to be familiar with the specific requirements associated with the degree, diploma or certificate sought. While advice and counseling are available, it is the responsibility of each student to ensure that the courses in which registration is affected are appropriate to the program requirements of the Schulich School of Business.

While the University will make every reasonable effort to offer courses and classes as required within programs, student should note that admission to a degree or other program does not guarantee admission to any given course or class.

Every student agrees by the act of registration to be bound by the regulations and policies of York University and of the Schulich School of Business.

In the event of an inconsistency between the general academic regulations and policies published in student handbooks and calendars, and such regulations and policies as established by the Schulich School of Business and Senate, the version of such material as established by the Schulich School of Business and the Senate shall prevail.

York University Policies

York University disclaims all responsibility and liability for loss or damage suffered or incurred by any student or other party as a result of delays in or termination of its services, courses, or classes by reason of force majeure, fire, flood, riots, war, strikes, lock-outs, damage to University property, financial exigency or other events beyond the reasonable control of the University.

York University disclaims any and all liability for damages arising as a result of errors, interruptions or disruptions to operations or connected with its operations or its campuses, arising out of computer failure or non-compliance of its computing systems.

York University is a smoke-free institution. Smoking is permitted in designated areas only.

Important Websites

Resource	URL	Go here for...
The Schulich School of Business official website	schulich.yorku.ca	Program Information, Financial Aid, International Opportunities, Career Development Centre, MySchulich student portal
Schulich Current Graduate Students page	schulich.yorku.ca/current-students/graduate-students	Important Dates, Course Offerings, Wait List, Upcoming Events, Enrolment Details, Academic Petitions and Appeals
Student Services GradBlog	gradblog.schulich.yorku.ca	Student stories, Regular updates about courses, important dates, enrolment and events
York Online Services	currentstudents.yorku.ca	Enrolment & fees, Housing & Transportation, Academic Regulations & Grade Reports
Student Accessibility Services	accessibility.students.yorku.ca	Resources for academic and personal development, individual and group counselling, Learning Skills Workshops
Graduate Business Council	gbcschulich.ca	Mission statement, executive reps, student clubs, services and events

2020-2021 Sessional Dates

Fall 2020			
Activity	Term F2	Term A	Term M
	<i>Most 3.00 credit courses</i>	<i>First-half 1.50 credit courses</i>	<i>Second-half 1.50 credit courses</i>
Class Start Date	Sept 14	Sept 14	Nov 2
Class End Date	Dec 11	Oct 26	Dec 11
Reading Week	Oct 27-30	n/a	n/a
Examinations	Dec 12-18	Oct 27-30	Dec 12-18
Last date to enrol without permission	Sept 18	Sept 18	Nov 6
Last date to enrol with permission	Sept 25	Sept 25	Nov 13
Last date to drop courses without academic penalty	Nov 13	Oct 9	Nov 27

Winter 2021			
Activity	Term W2	Term C	Term N
	<i>Most 3.00 credit courses</i>	<i>All first-half 1.50 credit courses</i>	<i>All second-half 1.50 credit courses</i>
Class Start Date	Jan 11	Jan 11	Mar 1
Class End Date	Apr 12	Feb 22	Apr 12
Reading Week	Feb 23-26	n/a	n/a
Examinations	Apr 17-23	Feb 23-26	Apr 17-23
Last date to enrol without permission	Jan 15	Jan 15	Mar 5
Last date to enrol with permission	Jan 22	Jan 22	Mar 12
Last date to drop courses without academic penalty	Mar 12	Feb 5	Mar 26

Summer 2021

Summer 2021 dates will be added to the Key Dates website once confirmed. Visit <https://schulich.yorku.ca/current-students/graduate-students/key-dates>.

2020-2021 Important Dates

Date	Reminder
September 7	Labour Day, University closed
September 10	Last day to pay Fall 2020 fees without financial penalty
September 14	Fall 2020 classes begin
October 12	Thanksgiving, University closed
Mid-October	October 2020 convocation (date TBA)
October 27-30	Reading Week. No classes, University open
December 11	Last day of Fall 2020 classes
December 12-18	Examination Week, Term F2
TBA	Winter Break, University closed
January 10	Last day to pay Winter 2020 fees without financial penalty
January 11	Winter 2021 classes begin
February 15	Family Day, University closed
February 23-26	Reading Week. No classes, University open
April 2	Good Friday, University closed
April 12	Last day of Winter 2021 classes
April 17-23	Examination Week, Term W2
Late June	June 2021 convocation (date TBA)
July 31	Deadline to apply for October 2021 convocation

Find Important Dates Online!
schulich.yorku.ca/current-students/graduate-students



Contact Us

The School's Division of Student Services & International Relations should be consulted on questions related to admissions, enrolment, registration, grade or course problems, financial assistance or special advising.



Meet us online!

schulich.yorku.ca/student-enrolment-services

Title	Name	E-mail
Associate Dean, Students	Kiridaran (Giri) Kanagaretnam	kkanagaretnam@schulich.yorku.ca
Executive Director	Lindsay Hillcoat	lhillcoat@schulich.yorku.ca
Financial Administrative Assistant	Heidi Furcha	hfurcha@schulich.yorku.ca
Student & Enrolment Services		
Director, Student & Enrolment Services	Luba Pan	panlyuba@schulich.yorku.ca
Records & Promotion Assistant	Sandra Osti	sosti@schulich.yorku.ca
Student Academic Services Coordinator	Rachel Ricer	rricer@schulich.yorku.ca
Student Success Coordinator	Fern Best	fbest@schulich.yorku.ca
Student Success Coordinator	April J. Walker	aprilj@schulich.yorku.ca
Registration & Academic Service Assistant	Kareene Martin	studentservices@schulich.yorku.ca
Student Programs Assistant	Meghann Fonceca	studentservices@schulich.yorku.ca
Communications Coordinator	Andrea Graham	abanerjee@schulich.yorku.ca
Financial Aid		
Manager, Admissions & Financial Aid	Doris Mak	finaid@schulich.yorku.ca
Financial Aid Officer	Anne Caulfield	finaid@schulich.yorku.ca
International Relations		
International Student Support Specialist	Ann Welsh	awelsh@schulich.yorku.ca
Graduate International Program Coordinator	Cheryl Stickle	cstickley@schulich.yorku.ca
International Information Assistant	Lan Yu	intlrelations@schulich.yorku.ca
Additional Contacts		
Office of the Associate Dean, Academic		teachingandlearning@schulich.yorku.ca

Professor Murat Kristal
Program Director,
MBAN & MMAI
mkristal@schulich.yorku.ca

Denise Dunbar
Program Coordinator
MBAN, MMAI & Supply Chain
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Fern M. Best
Student Success Coordinator
Student & Enrolment Services
fbest@schulich.yorku.ca

Enrolment

Registration and Enrolment

- The course enrolment process at York is completed by students online
- The process of making enrolment changes at York is also automated (e.g. changing course sections, substituting one course for another by dropping one and adding another, or dropping a course)
- Students without immediate access to a computer may use on-campus terminals, including the library, computer lab, or the computers in the Schulich Student & Enrolment Services Office, W263
- Students normally enrol for Summer term courses in March and for Fall and Winter courses in June
- Enrolment is on a first-come, first-served basis
- Students cannot add or drop courses after the deadline (see page 4 for details)

Enrolment Blocks

All students having an outstanding balance of \$1,000.00 or more will be blocked from enrolling in the Summer, Fall and/or Winter terms.

Enrolment Access Notification

A student's Enrolment Access Period begins on the date and time posted online at currentstudents.yorku.ca. Enrolment access start dates are posted on the Registrar's Office website (registrar.yorku.ca) by selecting "Find out when I can enrol." Enrolment access times are determined according to the number of completed credits a student obtains. Schulich access periods begin on different days. Students with the highest number of credits completed begin first. Once the enrolment access has begun, it continues until the final date to enrol in courses for that term.

We recommend that students enrol as early as possible once their access period begins. We also encourage students to verify their enrolment periodically online.

Course Offerings And Withdrawals

The Master of Management in Artificial Intelligence is a one year, full-time program with a specialized set of courses. Students are not permitted to take additional courses within the MMAI program at Schulich or out of Faculty, except by permission from the program director.

Course Withdrawals

- Dropping one or more courses will prevent a full-time student from completing the MMAI degree program within the prescribed program length and will result in withdrawal from the program
- See your academic advisor ahead of time to discuss the implications of dropping a course
- This program is offered on a full-time basis only

Course Cancellations

If a course is cancelled, Student & Enrolment Services immediately informs those enrolled via their Schulich e-mail.

Revised Course Offerings

Revisions to course offerings are also posted on the [Schulich Course Offerings database](#).

Revisions can include:

- cancelled courses
- new courses
- schedule changes (day/time)
- room changes
- new instructors

Additional enrolment information can be found in the Graduate Academic Policy Handbook: schulich.yorku.ca/handbooks.

Enrolment updates are also communicated to students via their academic advisors and e-mail updates from the Director, Student & Enrolment Services.

Master of Management in Artificial Intelligence (MMAI)

Artificial Intelligence (AI) is undergoing a landmark evolution, transforming the private and public sectors. As organizations adopt and invest in AI technology, a new style of management is needed – one that pairs a leader’s vision with a scientist’s mastery over a growing body of specialized knowledge.

The 12-month full-time Master of Management in Artificial Intelligence (MMAI)* is designed to meet the growing need for talented professionals with the skills and advanced applied knowledge to develop, evaluate, refine and implement AI-related applications and technologies. The capstone Artificial Intelligence Consulting Project (AICP) provides students with an opportunity to solve a significant business problem by designing an AI-centered approach. Working in the Deloitte Cognitive Analytics and Visualization Lab student teams will deliver a solution to a client organization, interacting with industry managers, technicians, suppliers and other stakeholders.



PROGRAM LENGTH

- 12 months, 45.00 credits

GRADUATION REQUIREMENTS

To graduate, a student must achieve an overall GPA of at least 4.40 (B-). Students must complete the following to be eligible to graduate from the program(s):

- 45.00 credits of Required Core Courses

ORIENTATION

- Attendance is mandatory for MMAI orientation in September.

Academic Advisor

Fern Best
Student Success Coordinator
fbest@schulich.yorku.ca



Career Opportunities

Graduates will possess a competitive combination of management skills, technical expertise and the ethical sensibilities required to execute solutions to business challenges.

Career support is embedded throughout the MMAI program journey, with structured training in Apache Hadoop, Structured Query Language (SQL), Tableau Data Visualization and Microsoft Azure.

Please contact Gina Pagiamtzis, MMAI Corporate Leads & Projects, with any career related questions:

“In the coming decade, the demand for talented individuals with management skills and knowledge of advanced AI applications will continue to grow exponentially.

-Murat Kristal
Program Director,
Master of Management in
Artificial Intelligence

Promotion Standards

1. Students enrolled in the Master of Management in Artificial Intelligence (MMAI) program will be reviewed as follows to determine whether or not they have met promotion requirements below:

- initial review upon completion of Term 2
- subsequent review at the end of each following term

2. To maintain their standing in the program, all students must maintain a GPA of at least 4.20 and not receive a grade of F in more than 3.00 credits of course work.

3. Students who do not meet these requirements will be withdrawn.

4. Students who fail a required course must retake it. Students who fail an elective course may retake it, or may elect to take another course. Students who re-take a failed course and receive a second failing grade will be withdrawn.

5. A student who has been withdrawn from the program is advised to seek the help of their Academic Advisor to discuss the best way forward. The student may petition to the Student Affairs Committee to be allowed to continue in the program without having met the promotion requirements.

Master of Management in Artificial Intelligence (MMAI)		
Term 1 (Fall) 15.00 credits	Term 2 (Winter) 15.00 credits	Term 3 (Summer) 15.00 credits
MMAI 5000 3.00 Artificial Intelligence Fundamentals	MMAI 5040 3.00 Business Applications of Artificial Intelligence I	MMAI 5090 3.00 Business Applications of Artificial Intelligence II
MMAI 5100 3.00 Database Fundamentals	MBAN 5140 3.00 Visual Analytics & Modelling	MMAI 5400 3.00 Natural Language Processing
MMAI 5200 3.00 Algorithms for Business Analysis	MMAI 5300 3.00 Numerical Methods & Analysis	MMAI 5500 3.00 Applications of Neural Networks & Deep Learning In Business
MGMT 6300 3.00 Case Analysis & Presentation Skills	ORGS 6350 3.00 Managing Change	ORGS 6500 3.00 Interpersonal Managerial Skills
GS/PHIL 5340 3.00 Ethics & Societal Implications of Artificial Intelligence	MMAI 6050 6.00 AI Consulting Project	



Find Program Details Online!
schulich.yorku.ca/programs/mmai

Academic Requirements:

REQUIRED COURSES (45.00 credits)

MMAI 5000 3.00	Artificial Intelligence Fundamentals
MMAI 5100 3.00	Database Fundamentals
MMAI 5200 3.00	Algorithms for Business Analysis
MGMT 6300 3.00	Case Analysis & Presentation Skills
GS/PHIL 5340 3.00	Ethics & Societal Implications of Artificial Intelligence
MMAI 5040 3.00	Business Applications of Artificial Intelligence I
MBAN 5140 3.00	Visual Analytics & Modelling
MMAI 5300 3.00	Numerical Methods & Analysis
ORGS 6350 3.00	Managing Change
MMAI 5090 3.00	Business Applications of Artificial Intelligence II
MMAI 5400 3.00	Natural Language Processing
MMAI 5500 3.00	Applications of Neural Networks & Deep Learning In Business
ORGS 6500 3.00	Interpersonal Managerial Skills
MMAI 6050 6.00	AI Consulting Project

Co-curricular Experience:

REQUIRED WORKSHOPS

Analytics and Professional Development workshops augment academic learning, promote professional development, and are facilitated by industry experts. Participation is expected.

Workshops will be offered over the course of the academic year, and may require single day or multiple day scheduling. Though workshops will not be offered each week, the expectation is that students will be available and attend workshops as they are scheduled. Additionally, some workshops may extend to the weekend.

Students will be informed of upcoming workshops by the MBAN/MMAI Program Office.

PROFESSIONAL DEVELOPMENT SERIES

MMAI students have access to a variety of specialized services and resources that will support them in their success.

MMAI career related activities include:

- networking events
- information sessions
- interviews
- workshops
- résumé book

MMAI Faculty

Program Director

Mehmet Murat Kristal
BSc (METS, Turkey); MBA (Bilkent, Turkey); PhD (North Carolina)
Associate Professor of Operations Management and Information Systems
Program Director, Master of Business Analytics
Program Director, Master of Management in Artificial Intelligence

Markus Biehl
MS (Kaiserslautern, Germany); MS & PhD (Georgia Institute of Technology)
Professor of Operations Management and Information Systems

Adam Diamant

BSc (Toronto); MSc (Boston); PhD (Toronto)
Assistant Professor, Operations Management and Information Systems

Henry M. Kim

BASc (Toronto); MEng (Michigan); PhD (Toronto)
Associate Professor of Operations Management and Information Systems

Moren Levesque

BSc & MSc (Laval); PhD (British Columbia)
Professor of Operations Management and Information Systems
Certified General Accountants of Ontario Chair in International Entrepreneurship

Zhepeng (Lionel) Li

B.Sc. (University of Technology, Hefei, China); M.S. (University of Science and Technology, Hefei, China); Ph.D. (University of Utah)
Assistant Professor of Operations Management and Information Systems

Wade D. Cook

MSc (Queens); BSc (Mt. Allison); PhD (Dalhousie)
Professor of Operations Management and Information Systems; Gordon Charlton Shaw Professor of Management Science

David Johnston

BA & MBA & PhD (UWO)
Program Director, Master of Supply Chain Management; Professor of Operations Management and Information Systems

Scott Yeomans

MASc (Toronto); BAdmin & BSc (Regina); PhD (MacMaster)
Professor of Operations Management and Information Systems



MMAI Advisory Board

Chair Murat Kristal Program Director, Master of Business Analytics; Program Director, Master of Management in Artificial Intelligence; Associate Professor, Operations Management and Information Systems, Schulich School of Business	Ilya Bahar M.Sc & B.Sc Industrial Engineering & Management David Beaton Senior Partner, Custometrics, Inc. Connie Bonello Vice President Consulting Info-Tech Research Group Angela Brown President and CEO, Moneris Solutions Corporation Justin DeLuca Director of Revenue Management & Performance Planning, Labatt Breweries of Canada Nat D'Ercole Partner, Deloitte	Victor Dudemaine Assistant Vice President, Data Architecture and Business Intelligence Services, Sun Life Canada Pat Finerty Vice President, Alliances and Business Development, SAS Institute (Canada) Inc Dana Fox Founder, Waterloo Institute for Smarter Government Neil Freyke Chief Data Officer, Group Functions, Manulife Financial Corporation Victor Garcia Managing Director, ABC Live Corporation	Silvia Gonzalez-Zamora P&C Director, Organizational Behaviour and Data Business Transformations National Consulting Financial Services, KPMG LLP Hershel Harris CTO, Georgian Partners Peter Husar VP, Enterprise Customer Data and Analytics, TD Bank Group Steven Karan Senior Director, Consulting-Data & Analytics Shohreh Mouri VP, RBC Engineering Solutions Innovation & Technology team at Chris Mendes Managing Director, BMO Enterprise Data Strategy Capabilities & Product Management
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Course Descriptions

REMINDER



Not all courses listed are offered every term. For full course details, visit the [Schulich Course Offerings database](#).

Term 1

MMAI 5000 3.00 Artificial Intelligence Fundamentals

This course introduces students to the field of artificial intelligence, with a focus on AI-driven business applications. It provides a historical perspective tracing the emergence of basic concepts of contemporary AI. Students learn key artificial intelligence techniques including knowledge representation and symbolic reasoning, biologically inspired approaches to AI, supervised, unsupervised and reinforcement learning, multi-agent systems and natural language processing.

MMAI 5100 3.00 Database Fundamentals

Database Management Systems are computer-based systems used by organizations to manage the vast amount of data that accompany daily operations, support data analysis, and enable intelligent decision making. This course provides an applied introduction to database management systems and their use in the business environment. The course covers the fundamentals of database analysis and design.

MMAI 5200 3.00 Algorithms for Business Analysis

The course covers main approaches to design and analysis of algorithms used in business contexts, including important algorithms and data structures, and results in complexity and computability. This course is a pre-requisite for MMAI 5300.

GS/PHIL 5340 3.00 Ethics & Societal Implications of Artificial Intelligence

This course is intended for students with professional interest in the social and ethical implications of AI. Topics include theoretical issues (could AI ever have moral rights?), practical issues (algorithmic bias, labour automation, data privacy), and professional issues (tech industry social responsibility).

MGMT 6300 3.00 Case Analysis & Presentation Skills

This course is designed to give students the opportunity to practice and develop their analytical thinking and presentation skills. The key objective of the course is to train students to successfully participate in national and international case competitions. A secondary objective is to prepare students to successfully interview for management consulting positions. Second-year MBA students who enjoy analyzing cases and delivering presentations are encouraged to take the course.

Corequisite: SB/SGMT 6000 3.00

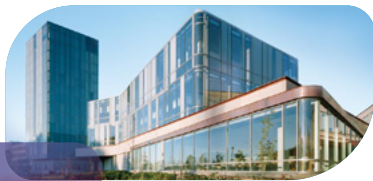
Term 2

MMAI 5040 3.00 Business Applications Of Artificial Intelligence I

The emphasis in this course will be on automation and autonomous cyber-physical system applications of artificial intelligence. Students will delve deeper into topics which include: probabilistic reasoning & handling uncertainty; search; perception & sensing; human-computer interfacing; conversational systems; and autonomous robotics, drones, and autonomous vehicles.

MBAN 5140 3.00 Visual Analytics & Modelling

This course is an introduction to the fundamental theories of visual communication design applied in data visualization and visual analytics. Students become familiar with data-driven decision making workflows and storytelling best practices. Major areas for discussion include visual design principals, data structures, taxonomy of data visualization models and weekly technical tutorials using the Tableau software.



Contact Us

Student Services & International Relations
Seymour Schulich Building | York University
4700 Keele Street, Toronto ON M3J 1P3
416-736-5303 | studentservices@schulich.yorku.ca
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