Student Services & International Relations
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SSB W263 | 416-736-5303

# MMAI

## Master of Management in Artificial Intelligence

## Academic Handbook

2024-25

# Table of Contents



**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 Academic Resources webpage**

### 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 Univeristy 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 Accessibilty 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 |

# 2024-2025 Sessional Dates

| SUMMER 2024 | | | |
|---|---|---|---|
| **Activity** | **Term S** | **Term E** | **Term G** |
| Class Start Date | May 6 | May 6 | Jun 17 |
| Class End Date | Jul 26 | Jun 14 | Jul 26 |
| Reading Week | N/A | N/A | N/A |
| Examinations | Jul 29 - Aug 4 | Jun 21 | Jul 29 - Aug 4 |
| Last date to enrol without permission | May 13 | May 13 | Jun 24 |
| Last date to enrol with permission | May 20 | May 20 | Jul 1 |
| Last date to drop courses | Jun 10 | May 27 | Jul 8 |

| FALL 2024 | | | |
|---|---|---|---|
| **Activity** | **Term F2** | **Term A** | **Term M** |
| Class Start Date | Sept 9 | Sept 9 | Oct 28 |
| Class End Date | Dec 6 | Oct 21 | Dec 6 |
| Reading Week | Oct 22 - 25 | N/A | N/A |
| Examinations | Dec 9 - 13 | Oct 22 - 27 | Dec 9 - 15 |
| Last date to enrol without permission | Sept 16 | Sept 16 | Nov 4 |
| Last date to enrol with permission | Sept 23 | Sept 23 | Nov 11 |
| Last date to drop courses | Oct 14 | Sept 30 | Nov 18 |

| WINTER 2025 | | | |
|---|---|---|---|
| **Activity** | **Term W2** | **Term C** | **Term N** |
| Class Start Date | Jan 6 | Jan 6 | Feb 24 |
| Class End Date | Apr 4 | Feb 16 | Apr 6 |
| Reading Week | Feb 18 - 21 | N/A | N/A |
| Examinations | Apr 7 - 13 | Feb 18 - 23 | Apr 7 - 13 |
| Last date to enrol without permission | Jan 13 | Jan 13 | Mar 3 |
| Last date to enrol with permission | Jan 20 | Jan 20 | Mar 10 |
| Last date to drop courses | Feb 10 | Jan 27 | Mar 17 |

# 2024-2025 Important Dates

| DATE | REMINDER |
|---|---|
| May 6 | First day of Summer classes |
| May 10 | Summer Term fees due |
| May 20 | Victoria Day (university closed) |
| May 24 | Mandatory Make-up Day (in lieu of Victoria Day) |
| July 1 | Canada Day (university closed) |
| July 5 | Mandatory Make-Up Day (in lieu of Canada Day) |
| August 5 | Civic Holiday (university closed) |
| September 2 | Labour Day (university closed) |
| September 9 | First day of Fall classes |
| September 10 | Fall Term fees due |
| October 14 | Thanksgiving (university closed) |
| December 6 | Last day of Fall classes |

**Find Important Dates online!**
**schulich.yorku.ca/current-students/graduate-students/key-dates**

# 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) Kanegaretnam | 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 |
| Manager, Student Success | Amir Khan | amkhan@schulich.yorku.ca |
| Manager, Communications | Beth Gallagher | bethlg@schulich.yorku.ca |
| Records & Promotion Assistant | Sophia Yu | sophyu@schulich.yorku.ca |
| Student Success Coordinator | Lyndsay Vair | vairl@schulich.yorku.ca |
| Registration & Academic Service Assistant | Kareene Martin | studentservices@schulich.yorku.ca |
| Student Service Assistant | Amber Pan | studentservices@schulich.yorku.ca |
| Systems Coordinator | Vivian Sun | studentservices@schulich.yorku.ca |
| Communications Coordinator | Nikeeta Machado | nikeeta@schulich.yorku.ca |
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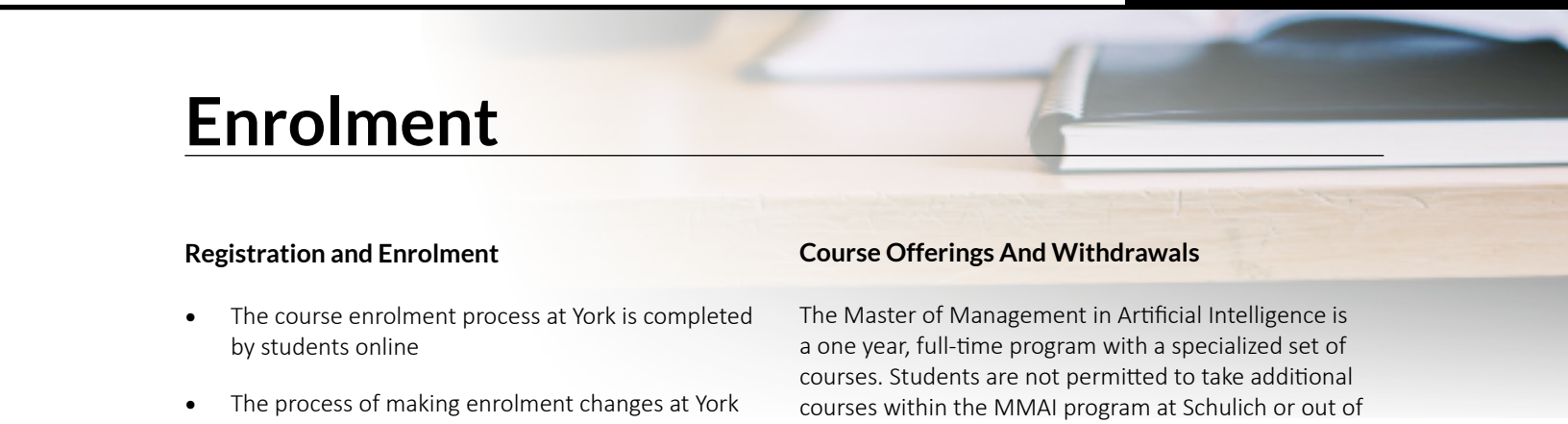
| Assistant Director Admissions & Financial Aid | Jeffrey Little | finaid@schulich.yorku.ca |
| Financial Aid Officer | Anne Caulfield | finaid@schulich.yorku.ca |
| **INTERNATIONAL RELATIONS** | | |
| Associate Director, International Relations | Ann Welsh | awelsh@schulich.yorku.ca |
| Graduate International Program Coordinator | Cheryl Stickley | cstickley@schulich.yorku.ca |
| International Information Assistant | Lan Yu | intlrelations@schulich.yorku.ca |
| International Student Support Specialist | Vino Shanmuganathan | vshan@schulich.yorku.ca |
| International Student Support Specialist | Sophie Yang | yangjy@schulich.yorku.ca |

## ADDITIONAL CONTACTS

### Julian Scott Yeomans
Program Director
BAdmin & BSc (Regina); MASc (Toronto); PhD (McMaster)
Professor of Operations Management and Information Systems
syeomans@yorku.ca

### Denise Dunbar
Program Coordinator
MBAN, MMAI & MSCM
SB S337N
416-736-2100 ext. 55074
denise1@schulich.yorku.ca

### Lyndsay Vair
Student Success Coordinator
Student & Enrolment Services
**studentservices@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
**studentservices@schulich.yorku.ca**

Lyndsay Vair
Student Success Coordinator
**studentservices@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 Ricardo Luhm, MMAI Corporate Leads & Projects, with any career related questions:

MMAI Corporate Lead & Projects
Ricardo Luhm
career@schulich.yorku.ca

**FIND PROGRAM DETAILS ONLINE!**
schulich.yorku.ca/programs/mmai

## 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 (Summer)<br>15.00 credits | Term 2 (Fall)<br>15.00 credits | Term 3 (Winter)<br>15.00 credits |
|---|---|---|
| MMAI 5000 3.00<br>Artificial Intelligence Fundamentals | MMAI 5040 3.00<br>Business Applications of Artificial Intelligence I | MMAI 5090 3.00<br>Business Applications of Artificial Intelligence II |
| MMAI 5100 3.00<br>Database Fundamentals | MMAI 5400 3.00<br>Natural Language Processing | MMAI 5140 3.00<br>Visual Analytics & Modelling |
| MBAN 6110 3.00<br>Data Science I | MMAI 5500 3.00<br>Applications of Neural Networks & Deep Learning in Business | MMAI 5200 3.00<br>Algorithms for Business Analysis |
| MGMT 6300 3.00<br>Case Analysis & Presentation Skills | MBAN 5110 3.00<br>Predicitive Modelling | SUST 5100 3.00<br>Ethics & Technology |
| OMIS 6750 3.00<br>Project Management | MMAI 6050 6.00<br>AI Consulting Project | |

Note: Courses and sequencing subject to change.

# Academic Requirements:

## REQUIRED COURSES (45.00 credits)

| | |
|---|---|
| MBAN 5110 3.00 | Predective Modelling |
| MBAN 6110 3.00 | Data Science |
| 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 |
| MMAI 5140 3.00 | Visual Analytics & Modelling |
| MMAI 5200 3.00 | Algorithms for Business Analysis |
| MMAI 5400 3.00 | Natural Language Processing |
| MMAI 5500 3.00 | Applications of Neural Networks & Deep Learning In Business |
| MMAI 6050 6.00 | AI Consulting Project |
| MGMT 6300 3.00 | Case Analysis & Presentation Skills |
| OMIS 6750 3.00 | Project Management |
| SUST 5100 3.00 | Ethics & Technology |

# 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
**Julian Scott Yeomans**
MASc (Toronto); BAdmin & BSc (Regina); PhD (MacMaster)
Professor of Operations Management and Information Systems

**Adam Diamant**
BSc (Toronto); MSc (Boston); PhD (Toronto)
Associate Professor of Operations Management and Information Systems

**David Elsner**
Associate Director, MBAN Program
Adjunct Professor, Master of Management in Artificial Intelligence (MMAI) Program and Master of Business Analytics (MBAN) Program; President, DHE Consulting; Managing Partner, illuminaite

**Divinus Oppong-Tawiah**
BSc (Kwame Nkrumah University); MBA (University of Ghana); MSc (Queen's); PhD (McGill)
Assistant Professor of Operations Management and Information Systems

**Henry M. Kim**
BASc (Toronto); MEng (Michigan); PhD (Toronto)
Associate Professor of Operations Management and Information Systems

**Hemant Sangwan**
Lecturer, Master of Business Analytics and Master of Management in Artificial Intelligence

**Hjalmar Turesson**
Associate Director, MMAI Program
Deloitte Data Scientist; Lecturer, Master of Business Analytics and Master of Management in Artificial Intelligence

# Course Descriptions Summer 2024

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.

MBAN 6110 3.00 Data Science I

An introduction to data science techniques designed for students who will work with data scientists or invest in related ventures. The course introduces fundamental concepts and techniques for the analysis of data-centered business problems, the creation and evaluation of solutions, the data science strategies, the basic cycle of a data-mining project, and the integration into business strategies.

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

OMIS 6750 3.00 Project Management

*Previously MGMT 6700 3.00*
This course covers the strategic, organizational and operational aspects of managing projects. Students learn to manage the technical, behavioral, political and cultural aspects of temporary groups performing unique tasks. Topics covered include: defining deliverables, formulating project strategy, effective group organization, and management, dynamically allocating resources, managing without authority and resolving conflict. Traditional cost and time management techniques are covered using Microsoft Office and open-source, free project management software.

Course Credit Exclusion: SB/MGMT 6700 3.00

## Term 2

MMAI 5040 3.00 Business Applications Of Artificial Intelligence I

This course focuses on understanding the opportunities that artificial intelligence offers an organization to improve value creation. Students learn skills to develop, analyse and integrate artificial intelligent into business decision-making. Using case studies and hands-on in-class exercises students will be able to use machine learning to analyse text and social networks using Python and R.

MMAI 5400 3.00 Natural Language Processing

This course focuses on the principles and technologies of statistical machine- learning-based natural language processing and their application in text analytics, including retrieval, extraction, recognition, and analysis of information from large textual collections. Prerequisite: MMAI 5040 3.00 Business Applications of Artificial Intelligence I and MMAI 5300 3.00 Numerical Analysis.

MMAI 5500 3.00 Applications of Neural Networks and Deep Learning In Business

Deep learning systems, embodied by a variety of neural network models, are used increasingly in modern business applications. Students will learn about the basics of neural network and deep learning, and their applications to a range of business issues. By the end of the course, students will have sufficient domain knowledge to address practical business problems.

MBAN 5110 3.00 Predicitive Modelling

This course provides the tools needed to build models from data sets, validate models, and make predictions. The course emphasises the SAS environment. Major areas for discussion include analysis of variance, regression, categorical data analysis, and predictive modelling. The course emphasizes both theory and practice, allowing students to use statistical theory for purposes of business case analysis.

MMAI 6050 6.00 AI Consulting Project

The AI Consulting Project is an intensive, 2-term course where groups of 4 students undertake a comprehensive artificial intelligence (AI) project of an organization and provide business insights to enhance the site's success. At the conclusion of the project students present their work to a panel of at least two experts, including the course director, and to the client site.

## Term 3

MMAI 5090 3.00 Business Applications of Artificial Intelligence II

This course bridges the theoretical foundation and the business applications of artificial intelligence technology. Through in-class lecturing and hands-on activities, students learn fundamentals of AI technology, formulate business problems in AI paradigm and Applications of AI in addressing business problems. The class covers up-to-date AI applications such as Recommendation Systems, FinTech, Social Network Analytics, Sentiment Analysis etc.

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.

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.

SUST 5100 3.00 Ethics & Technology

This course explores the ethical underpinning of several technological issues including Artificial Intelligence, Privacy, Machine Replacement, etc. Students will seek to understand the implications of such technological developments on society, and to manage employees and organizations in a way that balances the tension between technological advancement and human ethics.

# Notes

# Notes

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## CONNECT:


Student Services &
International Relations

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*Last Updated: April 23, 2024*