

# MBAN

Master of Business Analytics

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## 2021-2022

Academic Handbook



Student Services & International Relations

[studentservices@schulich.yorku.ca](mailto:studentservices@schulich.yorku.ca)

SSB W263 | 416-736-5303

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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 [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. Not every course listed in this handbook need necessarily be offered in any given academic year.

It is the responsibility of all students to familiarize themselves each year with the general information sections of this Handbook and with the sections covering the Schulich School of Business, as well as with any additional regulations that may be on file in 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	<a href="http://schulich.yorku.ca">schulich.yorku.ca</a>	Program Information, Financial Aid, International Opportunities, Career Development Centre, MySchulich student portal
Schulich Current Graduate Students page	<a href="http://schulich.yorku.ca/current-students/graduate-students">schulich.yorku.ca/current-students/graduate-students</a>	Important Dates, Course Offerings, Wait List, Upcoming Events, Enrolment Details, Academic Petitions and Appeals
Student Services GradBlog	<a href="http://gradblog.schulich.yorku.ca">gradblog.schulich.yorku.ca</a>	Student stories, Regular updates about courses, important dates, enrolment and events
York Online Services	<a href="http://currentstudents.yorku.ca">currentstudents.yorku.ca</a>	Enrolment & fees, Housing & Transportation, Academic Regulations & Grade Reports
York Counseling & Disability Services	<a href="http://cds.info.yorku.ca">cds.info.yorku.ca</a>	Resources for academic and personal development, individual and group counselling, Learning Skills Workshops
Graduate Business Council	<a href="http://gbcschulich.com">gbcschulich.com</a>	Mission statement, executive reps, student clubs, services and events

## 2021-2022 Sessional Dates

Summer 2021			
Activity	Term S	Term E	Term G
Class Start Date	May 10	May 10	June 21
Class End Date	July 30	June 18	July 30
Reading Week	n/a	n/a	n/a
Examinations	Aug 3-7	June 25	Aug 3-7
Last date to enrol without permission	May 16	May 16	Jun 27
Last date to enrol with permission	May 30	May 23	Jul 4
Last date to drop courses	Jun 20	May 30	Jul 11

Fall 2021			
Activity	Term F2	Term A	Term M
Class Start Date	Sept 13	Sept 13	Nov 1
Class End Date	Dec 10	Oct 25	Dec 10
Reading Week	Oct 26-29	n/a	n/a
Examinations	Dec 11-17	Oct 26-29	Dec 11-17
Last date to enrol without permission	Sept 17	Sept 17	Nov 5
Last date to enrol with permission	Sept 24	Sept 24	Nov 12
Last date to drop courses	Nov 12	Oct 8	Nov 26

Winter 2022			
Activity	Term W2	Term C	Term N
Class Start Date	Jan 10	Jan 10	Feb 28
Class End Date	Apr 8	Feb 18	Apr 8
Reading Week	Feb 22-25	n/a	n/a
Examinations	Apr 16-22	Feb 22-25	Apr 16-22
Last date to enrol without permission	Jan 14	Jan 14	Mar 5
Last date to enrol with permission	Jan 21	Jan 21	Mar 12
Last date to drop courses	Mar 4	Feb 4	Mar 26

## 2021 Important Dates

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Date	Reminder
May 10	First day of Summer classes
May 10	Summer Term fees due
May 24	Victoria Day (university closed)
TBD	Mandatory Make-up Day (in lieu of Victoria Day)
July 1	Canada Day (university closed)
TBD	Mandatory Make-Up Day (in lieu of Canada Day)
August 2	Civic Holiday (university closed)
September 6	Labour Day (university closed)
September 10	Fall Term fees due
September 13	First day of Fall classes
October 11	Thanksgiving (university closed)
December 10	Last day of Fall classes

Find Important Dates online!  
[schulich.yorku.ca/current-students/graduate-students](https://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/](https://schulich.yorku.ca/student-enrolment-services/)



Title	Name	Room	E-mail
Associate Dean, Students	Kiridaran Kanegaretnam	S344H	mannisette@schulich.yorku.ca
Financial Administrative Assistant	Heidi Furcha	W262E	hfurcha@schulich.yorku.ca
<b>Student &amp; Enrolment Services</b>			
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Student Success Coordinator	Fern Best	W262C	fbest@schulich.yorku.ca
Registration & Academic Service Assistant	Kareene Martin	W262P	studentservices@schulich.yorku.ca
Student Service Assistant	Maria Rizzuto	W263B	studentservices@schulich.yorku.ca
Systems Coordinator	Vivian Sun	W263B	studentservices@schulich.yorku.ca
Communications Coordinator	Nikeeta Machado	W288	nikeeta@schulich.yorku.ca
<b>Financial Aid</b>			
Assistant Director Admissions & Financial Aid	Doris Mak	W263F	dmak@schulich.yorku.ca
Financial Aid Officer	Anne Caulfield	W263C	finaid@schulich.yorku.ca
<b>International Relations</b>			
Associate Director, International Relations	Ann Welsh	W262J	awelsh@schulich.yorku.ca
Graduate International Program Coordinator	Cheryl Stickley	W262O	cstickley@schulich.yorku.ca
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International Student Support Specialist	VinoShanmuganathan		vshan@schulich.yorku.ca
<b>Additional Contacts</b>			
Office of the Associate Dean, Academic		N230	ada@schulich.yorku.ca



## David Johnston, BA, MBA, PhD

Program Director, Master of Business Analytics  
 Program Director Master of Supply Chain  
 Management  
 Professor of Operations Management and  
 Information Systems

## Denise Dunbar

Program Coordinator  
 MBAN, MMAI & MSCM  
 MB 230  
 416-736-2100 ext. 44681  
 denise1@schulich.yorku.ca

# Enrolment

## Enrolment Process

### 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 term deadline. See the [Key Dates webpage](#) 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

Enrolment access start dates are posted on the Registrar's Office website ([registrar.yorku.ca](http://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 Business Analytics is a one year, full-time program with a specialized set of courses. Students are not permitted to take additional courses within the MBAN program at Schulich or out of Faculty, except courses specified in the list of electives or by permission from the program director.

### Course Withdrawals

- dropping one or more courses will prevent a full-time student from completing the MBAN 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

## Other Enrolment Information

### 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

# Master of Business Analytics (MBAN)

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The Master of Business Analytics (MBAN) is a professional degree program designed to provide students with the breadth and depth of knowledge to be successful in a wide range of careers in areas such as banking, insurance, marketing, consulting, supply chain management, healthcare, and large technology firms.

Students will gain a conceptual understanding and methodological competence of established techniques in business analytics which are used to create and interpret knowledge in various business environments. They will be able to address complex issues using quantitative methodologies and create value for organizations using business analytics as a key measurement of performance and organizational planning. Graduates will understand how to apply business analytics to generate solutions which balance time, resources and complexity. They will possess a skill set that is both quantitative and qualitative, with the technical competence to analyze data coupled with the skills required to communicate insights effectively.



## STUDY OPTIONS

- May entry
- Full-time study only

## PROGRAM LENGTH

- 12 months (3 terms)

## Academic Advisor

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

## GRADUATION REQUIREMENTS

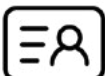
- Overall grade point average (GPA) of **4.40 (B-)**, excluding failures
- Successful completion of **45.00 credits** of courses, consisting of:

**39.00 credits** of Required Core Courses

**6.00 credits** of Elective Courses

Additional promotion standards apply.

## Career Opportunities



With increased data available by newer technologies, banking, healthcare, retail, e-commerce and many others industries are acknowledging the importance of analytics and hiring specialized professionals to analyze big data, create value and drive decision making.

Some of the functional roles where Schulich students are hired include: Forecasting Analyst, Business Analyst, Analytics Consultant, Business Intelligence Manager and Manager – Customer Analytics.

*“The Schulich Master of Business Analytics provided the tools and expertise to launch my career in the high-demand field of data analytics.”*

- Yon-Joon Choo, MBAN '16  
Senior Consultant, Artificial Intelligence,  
Deloitte



Find Program Details Online!

[schulich.yorku.ca/programs/mban](https://schulich.yorku.ca/programs/mban)



# MBAN at a Glance

## Promotion Standards

1. Students enrolled in the Master of Business Analytics 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 Business Analytics (MBAN)		
Term 1: Summer (15.00 credits)	Term 2: Fall (15.00 credits)	Term 3: Winter (15.00 credits)
MBAN 5110 3.00 Predictive Modeling I	MBAN 5210 3.00 Predictive Modelling II	MBAN 6200 3.00 Realizing Value from AI and Analytics
MBAN 5120 3.00 Data Management and Programming	MBAN 6120 3.00 Data Science II	MBAN 6400 3.00 Multivariate Methods for Business Analytics
MBAN 5140 3.00 Visual Analytics and Modelling	OMIS 6350 3.00 Advanced Spreadsheet Modelling and Programming for Business	GS/PHIL 5340 3.00 Ethics and Societal Implications of Artificial Intelligence*
MBAN 5330 3.00 Big Data Fundamentals and Applications	MBAN 6090 6.00 Analytics Consulting Project	
MBAN 6110 3.00 Data Science I	Elective 3.00 credits	Elective 3.00 credits

-  Core Courses
-  Elective Courses

\*This is an out-of-faculty course. It is offered by the Department of Philosophy in the Faculty of Graduate Studies at York University.

## Academic Requirements:

### REQUIRED COURSES (39.00 credits)

MBAN 5110 3.00	Predictive Modelling I
MBAN 5120 3.00	Data Management and Programming
MBAN 5140 3.00	Visual Analytics and Modelling
MBAN 5210 3.00	Predictive Modelling II
MBAN 5330 3.00	Big Data Fundamentals and Applications
MBAN 6110 3.00	Data Science I
MBAN 6120 3.00	Data Science II
MBAN 6200 3.00	Realizing Value from AI and Analytics
MBAN 6400 3.00	Multivariate Methods for Business Analytics
OMIS 6350 3.00	Advanced Spreadsheet Modelling & Programming for Business
PHIL 5340 3.00	Ethics and Societal Implications of Artificial Intelligence
MBAN 6090 6.00	Analytics Consulting Project

### ELECTIVE COURSES (6.00 credits)

Students will choose electives from a limited list selected by the Program Director.

Instructions regarding enrolment in elective courses will be sent to students via e-mail from Student & Enrolment Services.

## 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 Program Office.



### PROFESSIONAL DEVELOPMENT SERIES

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

MBAN career related activities include:

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

MBAN Career related activities are scheduled throughout the course of the academic year.

## MBAN Instructors: 2021-2022

### Program Director

#### David Johnston

BA, MBA, PhD  
Professor of Operations Management and Information Systems; George Weston Research Chair in Sustainable Supply Chains; Program Director, Master of Management in Artificial Intelligence

#### Murat Kristal

BSc (METS, Turkey); MBA (Bilkent, Turkey); PhD (North Carolina)  
Associate Professor of Operations Management and Information Systems; Director, Centre of Excellence in Analytics & AI Leadership, Schulich Executive Education Centre; Special Advisor, AI & Business Analytics

#### Adam Diamant

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

#### David Elsner

BA, BSc  
Adjunct Professor, Master of Management in Artificial Intelligence (MMAI) Program and Master of Business Analytics (MBAN) Program; President, DHE Consulting; Managing Partner, illuminaite

#### Hemant Sangwan

Lecturer, Master of Business Analytics and Master of Management in Artificial Intelligence

#### Hjalmar Turesson

Deloitte Data Scientist; Lecturer, Master of Business Analytics and Master of Management in Artificial Intelligence

#### Moren Lévesque

Professor of Operations Management and Information Systems; CPA Ontario Chair in International Entrepreneurship; Co-director of Entrepreneurial Studies

#### Wade D

University Professor Emeritus of Operations Management and Information Systems; Gordon Charlton Shaw Professor of Management Science

#### Julian Scott Yeomans

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

#### Zhepeng (Lionel) Li

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

#### Henry M. Kim

BASc (Toronto); MEng (Michigan); PhD (Toronto)  
Associate Professor of Operations Management and Information Systems; Co-Director, BlockchainLab

#### Markus Biehl

Professor of Operations Management & Information Systems

#### Richard H. Irving

Professor Emeritus of Operations Management and Information Systems



## MBAN Advisory Board

### Chair

**Murat Kristal**  
Associate Professor,  
Operations Management  
and Information Systems,  
Schulich School of Business;  
Director, Centre of Excellence  
in Analytics & AI Leadership,  
Schulich Executive Education  
Centre; Special Advisor, AI &  
Business Analytics

**Connie Bonello**  
Insights and Data Financial  
Services Leader,  
Capgemini

**Justin DeLuca**  
Regional Vice President, Eastern  
Canada, Beyond Beer, Labatt  
Breweries of Canada

**Victor Dudemaine**  
Assistant Vice President,  
Enterprise Data OPTrust

**Dana Fox**  
Founder,  
Waterloo Institute for Smarter  
Government

**Neil Freyke**  
Chief Data Officer, Group  
Functions,  
Manulife Financial Corporation

**Victor Garcia**  
Chief Executive Officer,  
ABC Live Corporation

**Silvia Gonzalez-Zamora**  
Director, KPMG Canada

**Hershel Harris**  
Board Member,  
Habitat for Humanity GTA

**Peter Husar**  
VP, Analytics Strategy  
& Planning,  
TD Bank Group

**Steven Karan**  
Vice President Digital &  
Analytics, GHD Digital

**Paul Lewis**  
Global Vice President and  
CTO, Hitachi Vantara

**Sanjay Khanna**  
Futurist,  
Baker and McKenzie LLP

**Theo Ling**  
Partner,  
Baker and McKenzie LLP

**Ramsey Mansour**  
Vice President,  
Marketing and Strategy,  
Purrolator

**Chris Matys**  
Founder,  
Ignite AI

**Alex Mohelsky**  
Partner, Canadian Data and  
Analytics Leader,  
Ernst & Young LLP

**Damien Mok**  
Director, Rewards & Loyalty  
Insights and Business  
Performance,  
Royal Bank of Canada

**Eric Monteiro**  
Senior Vice President,  
Chief Client Experience  
Officer,  
Sun Life Financial

**Derek Nogiec**  
VP, Business Development  
& Strategic Alliances,  
Plotly

**Sumeet Pelia**  
Director, AI  
Deloitte  
Omnia AI

**Stefan Popowycz**  
Partner  
Deloitte

**Daniel Preston**  
Vice President, Finance  
Labatt Breweries of Canada

**Eugene Roman**  
Principle  
Design Ai Ltd.

**Parinaz Sobhani**  
Director, Machine  
Learning,  
Georgian Partners

**Palash Thakur**  
Senior Director,  
CIBC

**Rogan Vleming**  
Head of Data Science  
& Engineering, Simon-  
Kucher & Partners

**Arif Virani**  
Chief Operating Officer  
DarwinAI

**Alexis Zamkow**  
Digital Strategy and  
Innovation,  
IBM

# Course Descriptions

## REMINDER



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

2. If you are uncertain about the course content or whether or not a course fits your academic goals, please speak with your academic advisor.

3. Out-of-faculty courses are subject to approval by the program director.

### ACTG 5210 1.50 Management Accounting

An introduction to management accounting techniques that are useful in management decision-making situations such as cost management, pricing special orders, determining service levels and performance appraisal. The non-applicability of external reporting figures for most management decisions is reviewed.

### ACTG 6350 1.50 Advanced Cost and Management Accounting

This course develops problem-solving skills for internal accounting applications. Topics covered include product mix decisions, managing scarce resources, product costing and pricing, budgeting, and international transfer pricing.

Prerequisite: SB/ACTG 5210 1.50

### ECON 6210 3.00 Economic Forecasting and Analysis

An increasing number of organizations make explicit forecasts of the economic environment within which they will be operating as a basis for forward-looking plans. This course studies the main forecasting methods in relation to the length of the forecasting time horizon. Several systematic appraisals of past forecasts are reviewed.

### FINE 6310 3.00 Econometrics of Financial Markets

This empirical methods course focuses on the statistical techniques that are most often used in the analysis of financial markets. The list of topics include: statistical properties of asset returns, tests of asset pricing models, efficient market hypothesis, event study methodology, simulation methods, panel data analysis, and volatility estimation such as GARCH, value-at-risk, and time-varying correlations.

### FNSV 6700 3.00

### Management of Risk in Financial Institutions

Risk is the fundamental element that influences the behaviour of financial institutions. FNSV 6700 provides a comprehensive introduction to risk management. Presented within the framework of financial institutions, the course covers the design and operation of a risk-management system, modeling and the interplay between internal oversight and external regulation. The theory of risk management (market, credit and operational risk) comes alive through practical case evaluation and presentations from the senior executives in the risk management field. The course provides the essential analytical foundations of risk management in a way appropriate for those who do not have a mathematical background.

### FNSV 6990 1.50

### Enterprise Risk Management and Strategy

Strategy and risk management are two sides of value creation for companies. Strategic choice must identify how these choices affect a broad array of stakeholders. A firm must be organized to recognize, measure, monitor, and disclose risks if it is to implement its strategy. This course will focus upon the strategic importance of risk management rather than more technical aspects.

### MGMT 6700 3.00

### Project Management

This course covers the strategic, organizational and operational aspects of managing projects. Students learn to manage the technical, behavioural, 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 contemporary software packages.

### MKTG 6050 3.00

### Marketing Research

This course develops students' understanding of basic and advanced market research methods. Students learn to evaluate completed research projects and conduct research studies, developing proficiency in defining research questions, developing research designs, selecting appropriate samples, conducting analysis and writing actionable management reports. Also examined are mobile research, brand maps, social media monitoring/metrics, Big Data, consumer surveillance and data privacy issues.

## MKTG 6150 3.00 Consumer Behaviour

This course assists students in developing a thorough understanding of both organizational buyers and end consumers. The psychological, sociological, organizational and environmental factors that shape buyer behaviour are reviewed. Throughout the course, the implications for both marketing strategies and tactics are addressed.

## MKTG 6250 3.00 Business Marketing

The course explores the management of inter-firm relationships in a supply chain context, encompassing both supplier-manufacturer relationships, and the relationships between manufacturers and channel intermediaries. Students learn to see these relationships as strategic combinations of market competition, power, and trust. Topics include firm buying behaviour, the design of distribution channels, strategic implications of forward and backward vertical integration, various technology applications in SCM, and franchising.

## MKTG 6300 3.00 Service Marketing

This course examines the need for marketing in service industries, develops an understanding of the ways in which service marketing differs from product marketing, and improves students' understanding of how service characteristics affect the marketing function. Students learn to develop and implement marketing plans for service organizations.

## MKTG 6360 3.00 Marketing Metrics

This course focuses on developing the analytical skills required to successfully apply the principles of quantitative analysis to the marketing discipline. Students will learn the most common measurement methods currently being used in the marketing field.

## MBAN 5110 3.00 Predictive Modeling I

This course provides the tools needed to build models from data sets, validate models, and make predictions. The course emphasizes 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.

Corequisite: MBAN 5120 1.50

## MBAN 5120 3.00 Data Management &amp; Programming

The Data Management and Programming course examines advanced techniques for manipulating data. The course emphasizes the SAS environment. Major areas for discussion include controlling input and output, summarizing data, data transformations, and debugging.

Co-requisite: MBAN 5110 3.00

## MBAN 5140 3.00 Visual Analytics and 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.

## MBAN 5210 3.00 Predictive Modelling II

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

Prerequisite: MBAN 5120 3.00

## MBAN 5330 3.00 Big Data Fundamentals and Applications

This course establishes a foundation for data science in the business domain. Through in-class lecturing and hands-on projects, students learn fundamentals of data, data management and data-centric programming. The classes cover up-to-date applications in data science, such as Python, SQL and Hadoop.

## MBAN 6090 6.00 Analytics Consulting Project

The Analytics Consulting Project is the capstone integrative course of the MBAN program. It will allow students to deepen their understanding of the subject matter and methodologies, as well as provide an opportunity for hands-on, problem-driven research and application. It is an intensive, 2-term project where groups of four MBAN students undertake a comprehensive analytics project of an organization ("client site") and provide business insights to enhance the site's future success. At the conclusion of the analytics consulting project, students submit and present their final work to a panel of at least two experts, including the course director, and also to the client site.

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.

MBAN 6120 3.00                      Data Science II

This course is designed for business students who will pursue a career in the related industries. The course first teaches students Unix command line and Python programming language, which constitute the uniform computing environment for the following topics: data visualization; predictive modelling; relational database and SQL; Web APIs; big data, Hadoop and MapReduce; and Stochastic Search and Optimization methods. Towards the end of the course, various business cases from data science are introduced; examples may include: (i) online recommender systems; and (ii) Online targeted display advertising. Through in-class labs, the course gives students hands-on experience of advanced data science techniques. Students are required to bring their own laptop to participate in these in-class labs.

Prerequisite: MBAN 6110 3.00

MBAN 6200 3.00                      Realizing Value from AI  
and Analytics

This course provides a practical grounding in analytics and artificial intelligence (AI) and its business applications in organizations. Students will learn how to address business pain points through AI and analytics solutions and how to sell and deliver project ideas. Students will gain skills needed to transform an organization into an innovative, efficient and data driven company of the future.

MBAN 6400 3.00                      Multivariate Methods for  
Business Analytics

Provides a critical overview of the issues and methods involved in conducting empirical Operations Management (OM) research. This is a required course for doctoral students majoring Operations Management.

MBAN 6500 3.00    Artificial Intelligence in Business I

Students are introduced to the field of artificial intelligence, with a focus on business applications and a historical perspective that covers the basic terminology and concepts. The course covers multiple facets of artificial intelligence including knowledge representation and symbolic reasoning; biologically inspired approaches to artificial intelligence; supervised, unsupervised, and reinforcement learning; multi-agent systems; planning; and natural language processing.

MBAN 6510 3.00    Artificial Intelligence in Business II

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.

Prerequisite: SB/MBAN 6500 3.00

OMIS 6000 3.00                      Models and Applications in  
Operational Research

This course provides a survey of selected topics in operational research (OR). Emphasis is placed on the practical application of OR tools rather than on the mathematical properties. Application areas include: financial planning and portfolio selection, production, priority planning and marketing. Topics include: linear programming and its applications; programming to achieve a set of goals or targets with applications in finance and production; capital budgeting and project selection; transportation and network models; and portfolio models.

OMIS 6350 3.00    Advanced Spreadsheet Modelling &  
Programming for Business

This course enables the design, development, and implementation of integrated business analysis systems by combining the extended functionality of spreadsheets with the Visual Basic for Applications (VBA) programming language. The course demonstrates the power of combining the advanced analysis and modelling techniques of spreadsheets and VBA through applications to several practical problems from disparate business functions.

OMIS 6500 3.00

Global Operations and  
Information Management

Plant location, supplier selection and product and process development are no longer solely national issues. Hence, the first part of this course, we give an overview of global operations, including global supply chain management, network design for global operations and global entry strategies. This deals with how the use of information technology supports the management of global operations. Topics include value chain management, the concept of marketpace, business-to-business e-commerce, enterprise resource planning, and the effect of IT on R&D and collaboration, all in an international context.

OMIS 6560 3.00

## Supply Chain Management

This course is about how to make decisions that lead to the better design and management of supply chains. This often involves changing the network of relationships between suppliers and customers and other stakeholders as they design, contract, order, plan and coordinate goods and services together. This course covers essential quantitative supply chain management models, supportive information and e-commerce technologies, environmentally and socially responsible practices and customer-supplier relationship management.

OMIS 6955 3.00 Service Operations Management

This course is about designing and implementing service processes that respond effectively to customer requirements. Service processes involve high customer interaction, information intensive products and the requirement for real-time responsiveness to a wide variety of customer demands. Designing, implementing and maintaining these processes in a competitive environment requires service-oriented organizations to have a new level of competence. This course concentrates on the problems and opportunities found in large companies in rapidly changing industries such as financial services. Best practice and generic problems in service delivery can be found in many industries from manufacturing to retailing. Identifying effective strategies as well as specific techniques for process planning and control, and project implementation are important in the development of managerial competence in service operations.

Prerequisites: SB/OMIS 5120 1.50 and SB/OMIS 5210 1.50.

ORGS 6350 3.00

## Managing Change

As the environment of many business and non-profit organizations becomes increasingly complex and unstable, it is imperative that top managers be able to create a climate of flexibility and adaptability in their operations. Organizations must be able to undertake major change without destructive side effects to be truly successful. This course surveys the major methods available to the modern manager for effectively managing the process of change and creating a general climate in which needed changes are sought and welcomed throughout the organization. The course emphasizes case studies and the discussion of alternative change management models.

ORGS 6500 3.00

## Interpersonal Managerial Skills

Research demonstrates that people and their ability to work effectively together are critical success factors for organizations. This course focuses on specific personal and interpersonal skills for organizational (and professional) effectiveness. With an emphasis on experiential exercises, the course helps students develop skills such as communication; time, conflict and stress management; performance management; gaining influence; and self-awareness (including emotional intelligence).

ORGS 6560 3.00

## Negotiations

Provides students with insight into their own negotiation style and how to become a more effective negotiator. The course takes an experiential approach to exploring the concepts, theories, and psychology of negotiations. Students will gain knowledge of the different approaches to negotiations and the strategies and tactics unique to each. The course will provide students with opportunity to learn, practice, and refine negotiation skills as well as equip them with the skills necessary to negotiate constructive resolution to conflict in the workplace.

SGMT 6000 3.00

## Strategic Management

This course examines business and corporate strategy. The focus is on strategic management, the process of choosing and defining purposes and objectives, formulating and implementing a viable strategy and monitoring strategic performance. It deals with the organization in its totality and demonstrates how and why the various functions of business are interdependent and need to be coordinated if the organization is to perform effectively. The course elaborates on the applicability of the strategic management discipline to a variety of sizes and types of organizations.



### SGMT 6250 3.00 Strategy Execution

This course addresses the managerial challenge of executing a firm's strategy, by focusing on organizational elements that must be aligned to support a strategy as well as the tremendous difficulty of doing so. These elements include but are not limited to, organizational structures and control mechanisms that "match" the given strategy as well as strategic leadership. Students learn and apply theory regarding strategy execution by analyzing implementation and performance in specific firms.

Prerequisite: SB/SGMT 6000 3.00

### SGMT 6700 3.00 Strategic Capability Development

We bridge and extend SGMT 6000 and ORGS 5100, drawing on contemporary theory and practice to further develop the skills and knowledge needed for translating strategy into action. Strategic successes and challenges are viewed as opportunities for building and strengthening long-run dynamic strategic capabilities. Emphasis is placed on experiential and applied approaches.

Corequisite: SGMT 6000 3.00

GS/PHIL 5340 3.00 Ethics and 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).







## Contact Us

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