ACADEMIC COUNCIL REPORT

ACTION REQUESTED:

Recommendation	☒
Decision	☒
Discussion/Direction	☐
Information	☐

DATE:

FROM: Graduate Studies Committee

SUBJECT: New Program Proposal – Master of Financial Data Analytics

COMMITTEE MANDATE:

In accordance with Section c) of the Graduate Studies Committee (GSC) Terms of Reference, GSC has the responsibility "Examine proposals for new graduate degree and diploma programs" and "to recommend their approval, as appropriate, to Academic Council".

MOTION FOR CONSIDERATION:

That, pursuant to the recommendation of the Graduate Studies Committee, Academic Council hereby approves the Master of Financial Data Analytics and recommends approval of the program to the Board of Governors.

BACKGROUND/CONTEXT & RATIONALE:

The Master of Financial Data Analytics (MFDA) aims to train highly qualified finance professionals with data analytics skills. MFDA is the first program in Canada to combine finance, information technology, and data analytics, especially AI programming and applications. Students are expected to gain sufficient knowledge and experience in the field of financial data analytics required to be hired in the finance sector upon graduation. The MFDA program includes eight courses and a choice of internship or projects. The courses cover finance and data analytics skills applied to finance. Applicants can be from business/economics/finance background or mathematics/computer science/information technology/engineering/science other quantitative areas. The program prepares students for Financial Risk Manager (FRM) and Chartered Financial Analyst (CFA) designations.

This new program leverages the Faculty's strengths in finance, informatics, and data science by providing a market-oriented master's degree. Finance is the largest business research area in the Faculty of Business and Information Technology (FBIT) with six tenured and tenure-track professors. Data analytics is an inter-disciplinary field and FBIT has talents from both business and Information technology. FBIT professors have supervised graduate students, won SSHRC/NSERC grants, and published in top journals in data analytics. FBIT has established a Business Analytics & AI Research Group, which includes professors, graduate students, and a

business analytics lab. The Faculty is working with Global Association of Risk Professionals (GARP), the issuer of Financial Risk Manager (FRM) on accreditation. GARP has issued a letter of support to this program (previously named “Master of Computational Finance” in the early stage of proposal development). CFA accreditation is also planned.

The choice of program name is based on other programs in business schools and is reflective of its content which is finance and data analytics methods. The course code is MFDA which condenses the name into 4 letters for our information system. The program has two modes of delivery: on campus and online. The preferred mode is on campus. Whether the online mode is offered in any given year will depend on the resources available and market demand.

This degree is an integral part of our other new programs in the Faculty that are being developed such as the Master of Business Analytics and AI, and the MSc/PhD in Business and IT. MFDA includes finance courses and data analytics courses. The data analytics courses are cross-listed with Master of Business Analytics and AI (MBAI). The finance courses can be used in the future MSc/PhD in Business and IT. There will be resource efficiencies through joint program marketing and advising. Surpluses from the professional programs will offset expenses from the research degrees.

RESOURCES REQUIRED:

Master of Financial Data Analytics (MFDA) is a new market-oriented business graduate program. The Faculty of Business and IT has the expertise and capability to deliver the program with existing faculty who would be reassigned to the MFDA from other teaching duties. The budget of MFDA allocates two hires in the context of the overall faculty budget and subject to enrolment targets to facilitate this increase in teaching capacity and project supervision in the Faculty as part of the growth strategy. Sessional hires indicated in the first years of the budget will be utilized to cover undergraduate courses, freeing up FBIT experts to teach in the Graduate Programs.

Normally only tenured and tenure-track professors will teach and supervise MFDA students. Teaching faculty or sessional faculty with Ph.D. or solid financial expertise can be considered. TA hours will be scaled up as needed based on enrollment. TAs will be recruited from second year MFDA students as well as from the pool of Master and Doctor of Computer Science Students. The Computer Science graduate program is shared with the Faculties of Science, Engineering and Applied Science and Business and IT (FBIT).

WRDS with CRSP/Compustat and EIKON is the only technology resource needed. Additional TA hours will be required as enrollment increases.

CONSULTATION AND APPROVAL:

Graduate Studies Committee: 22 June 2021
Final Faculty Council Approval: 15 June 2021
Academic Resource Committee Review: October 2020, March 2021

NEXT STEPS:

- Pending the approval and recommendation of Academic Council, this proposal will move on to the Board
- The proposal must proceed through the following approval step subsequent to the Board:
    - Ontario Universities Council on Quality Assurance
    - Ontario Ministry of Colleges and Universities
- The expected date of implementation is the fall semester of 2022

SUPPORTING REFERENCE MATERIALS:

- New Program Proposal with Appendices (Bookmarked PDF File)

University of Ontario Institute of Technology
New Graduate Program Proposal

Name of proposed program:	Master of Financial Data Analytics
Degree Designation/Credential:	MFDA
Faculty (where the program will be housed):	Faculty of Business and IT
Collaborating Faculty (if applicable):	
Program Delivery Location:	North Oshawa Campus
Collaborating Institution(s) (if applicable):	
Proposed Program Start Date:	September 2022
Proposal Contact:	Michael Bliemel and Bin Chang
Prepared Date:	September 21st, 2020-Revised May 3rd, 2021

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1 Introduction

a) Program Abstract

Please provide a brief overview of the proposed program, in 1000 characters or less, including:

- *A clear statement of the purpose of the program*
- *Any program components, such as fields or pathways (note that fields and pathways are not required)*
- *Any distinctive elements, including alternative modes of delivery (including online)*

The Master of Financial Data Analytics (MFDA) aims to train highly qualified finance professionals with data analytics skills. MFDA is the first program in Canada to combine finance, information technology, and data analytics, especially AI programming and applications. Students are expected to gain sufficient knowledge and experience in the field of financial data analytics required to be hired in the finance sector upon graduation.

The MFDA program includes eight courses and a choice of internship or projects. The courses cover finance and data analytics skills applied to finance. Applicants can be from business/economics/finance background or mathematics/computer science/information technology/engineering/science other quantitative areas.

The program prepares students for Financial Risk Manager (FRM) and Chartered Financial Analyst (CFA) designations.

b) Background and Rationale

- *Identify what is being proposed and provide an academic rationale for the proposed program*
- *Explain the appropriateness of the program name and degree nomenclature; list any program fields, pathways, etc. (note that fields and pathways are not required)*
- *If applicable, describe the mode of delivery and how it will support students in achieving the learning objectives of the program*
- *Describe the ways in which the program fits into the broader array of program offerings*

This new program leverages our strengths in finance, informatics and data science by providing a market-oriented master's degree. Finance is the largest business research area in the Faculty of Business and Information Technology (FBIT) with six tenured and tenure-track professors. Finance faculty members have published in top academic journals, won FBIT Research Excellence awards, and some have published in Financial Times-50 journals, the highest-ranked business journals. The finance lab is equipped with Bloomberg, datastream, capital IQ, SDC, IBES, TickHistory, Rotman Interactive Trading and Rotman Portfolio Manager. Data analytics is an inter-disciplinary field and FBIT has talents from both business and Information technology. FBIT professors have supervised

graduate students, won SSHRC/NSERC grants, and published in top journals in data analytics. FBIT has established a Business Analytics & AI Research Group, which includes professors, graduate students, and a business analytics lab.

We are working with Global Association of Risk Professionals (GARP), the issuer of Financial Risk Manager (FRM) on accreditation. GARP has issued a letter of support to this program (previously named "Master of Computational Finance" in the early stage of proposal development) and it is attached. We also plan for CFA accreditation.

The choice of program name is based on other programs in business schools and is reflective of its content which is finance and data analytics methods. The course code is MFDA which condenses the name into 4 letters for our information system.
We design two modes of delivery: on campus and online. The preferred mode is on campus. Whether the online mode is offered in any given year will depend on the resources available and market demand.

This degree is an integral part of our other new programs in the Faculty that are being developed such as the Master of Business Analytics and AI, and the MSc/PhD in Business and IT. MFDA includes finance courses and data analytics courses. The data analytics courses are cross-listed with Master of Business Analytics and AI (MBAI). The finance courses can be used in future MSC/PHD in Business and IT. We will have resource efficiencies through joint program marketing and advising. Surpluses from the professional programs will offset expenses from our research degrees.

c) Mission, Vision, Strategic Plan, and Strategic Mandate Agreement

- *Describe how the program contributes to the University's Mission and Vision*
- *Explain how the program aligns with the goals and priorities outlined in the Faculty's(ies') and University's Strategic Plans*
- *Identify how the program fits within one or more areas of strength or growth in Ontario Tech University's Strategic Mandate Agreement*

The Master of Financial Data Analytics contributes to the University's Mission and Vision by providing a market driven degree in an in-demand field that is at the intersection of Finance, data analytics, and information technology.

MFDA aligns with the goals and priorities in the University and FBIT's Strategic Plans. It aligns with the goal to be "Canada's emerging leader in career-ready education and collaborative research that produces new and useful ideas." It aligns with FBIT's vision to "become the leading school in the space where diverse business, IT and industry innovations intersect." In this program, students will learn business and IT skills applied to finance, the skills that are in high demand in the finance industry.

Further the degree fits with the strategic mandate agreement in the area of strength in Informatics/Data Science. MFDA fits our Ontario Tech Vision in several ways, especially to "Provide superior undergraduate and graduate programs that are technology enriched and responsive to the needs of students and the evolving workplace".

d) Student Demand

- *Provide evidence of student demand, including number of prospective student inquiries; applications and registrations for similar programs; results from surveys/focus groups of existing students, graduates, or professionals in the field*
- *Include information about domestic vs. international student interest*

According to reporting by Bloomberg reporting and data from LinkedIn, job listings requiring artificial intelligence, machine learning, and data analytics in the financial industry increased nearly 60% in the past year. (https://www.bloomberg.com/news/articles/2019-08-20/finance-needs-people-who-work-well-with-robots). The industry demand drives us to build MFDA.

Our own Commerce students always ask the professors to write reference letters to apply for master programs in finance in other universities in Canada and overseas. Some alumni are doing or have done graduate programs in business at other universities. Parents and students in Ontario University Fairs have asked for information about our master programs. When our own MFDA is available, we expect applications from our own Commerce students.

Enrolment Information

- *Provide information regarding enrolment projections and complete Table 1*

The numbers below are the anticipated new enrollments / year. Master of Financial Data Analytics is new, but we can examine the enrollment information from traditional masters of finance in other universities for reference. McGill University provides its annual class size online and it is 21 in year 1, 42 in year 2, and 43 in year 3. The projection below is based on McGill data. But since Ontario Tech University is a newer university, we expect to take more years to reach 40 students a year, the steady state.

Table 1: Projected Enrollment by Academic and Program Year

Level of Study	Master's year 1	Master's year 2						Total Enrolment
Academic Year 2022 – 2023	15	#	#	#	#	#	#	15
Academic Year 2023 – 2024	20	15						35

Academic Year 2024 – 2025	25	20						45
Academic Year 2025– 2026	30	25						55
Academic Year 2026 – 2027	35	30						65
Academic Year 2027 – 2028	40*	35						75

(* We expect 40 to be a steady state)

e) Societal Need

- *Evidence of the need for graduates of the program and in which fields (within academic, public, and/or private sectors)*
- *Please indicate up to three occupations in which graduates from this proposed program may be employed using the Ontario Job Futures website*
- *For professional programs, a description of the program's congruence with current regulatory requirements*
- *Mention if any employers in the area support the need for this program and include a letter of support as an additional appendix.*

The amount of data being generated every day is staggering, at over 2.5 quintillion bytes of data coming from our activities on the web and from devices embedded everywhere (https://www.forbes.com/sites/bernardmarr/2018/05/21/how-much-data-do-we-create-every-day-the-mind-blowing-stats-everyone-should-read/#1e818f3d60ba). If we have to pick one industry which took the most benefit of data analytics then the answer would be financial industry. (https://www.knowledgenile.com/blogs/data-analytics-financial-services/)According to IBM report, 71 percent of banking and financial markets firms report that the use of information (including big data) and analytics is creating a competitive advantage for their organizations (https://www.ibm.com/downloads/cas/E4BWZ1PY).

As for Ontario, the Ontario Jobs Futures website lists 3 occupations that could be filled by graduates of the MFDA. These are Financial and Investments Analysis (growth rate=7-8%, 7000-8000 openings), Database Analysts and Data Administrators (growth rate= 14-15%, 3000-4000 openings), and Financial Managers (growth rate=4-5%, 5000-6000 openings).

Occupation	Outlook rating	Median income	Skill level
Database analysts and data administrators Database analysts design, develop and administer data management solutions using database management software. Data administrators develop and impleme ...	Above average	$83,370	University education
Financial and investment analysts Financial and investment analysts collect and analyze financial information such as economic forecasts, trading volumes and the movement of capital, f ...	Above average	$78,207	University education
Financial managers Financial managers plan, organize, direct, control and evaluate the operation of financial and accounting departments. They develop and implement the ...	Above average	$93,897	University education

The finance industry is the most regulated industry. Supervisory responsibility for the financial sector in Canada is divided among the federal government, the provincial governments, and a group of agencies within the federal government (https://research.osc.gov.on.ca/globalreg/cdnreg). Two designations are the most important in financial data analytics: they are Chartered Financial Analyst (CFA®) and Financial Risk Manager (FRM®). The body of knowledge in this degree covers the topics tested in those professional tests and it is anticipated that a subset of students will pursue credentials in parallel with the Masters, which will be encouraged after they complete the appropriate classes.

f) Duplication

- *Describe how the program is distinct from other programs at Ontario Tech. Is it reasonable to anticipate this program might affect enrolment in other related programs? If so, how might this be addressed?*
- *Identify similar or complementary programs offered elsewhere in Ontario in Table 2. Provide additional comment on the justification for this duplication.*

This is new and unique in Ontario Tech University. There will be no impact on the enrollment in other programs. The MFDA program is different from the MBAI as follows. (1) MFDA is a finance program, but MBAI does not have any finance content. (2) MFDA targets business and non-business applicants, but MBAI is for business applicants only. (3) MFDA graduates will work in investment/risk management jobs, but MBAI graduates will work in operational departments/back offices. MFDA is different from potential MSc/PhD programs that FBIT may propose in the future as MFDA is a professional program with high tuition and no required research components, but the others are research programs aiming at publications.

This is the first and only graduate program in Ontario that trains both finance and related data analytics skills. The unique curriculum is that this program combines finance, informatics and data science, especially AI programming and applications.

Our program is different from purely finance programs as it adds data analytics components. It is also different from finance and mathematics programs, as our data analytics components are suitable for business graduates without advanced mathematics background.

Table 2: List of Similar Programs in Ontario

Institution Name	**Credential Level and Program Name**
University of Toronto	Master of Mathematical Finance
Link to Program Web Page: https://www.mmf.utoronto.ca/	
Brief Program Description: If you have advanced math skills, consider a master's degree in mathematical finance. In the University of Toronto's 12-month Program, your superior math skills are focused on the tools of financial mathematics for an initial 4-month period. You then move immediately into an internship with a firm. Afterwards, you continue your coursework for the remainder of the school year.	
What differentiates the new program from this existing program: The existing program targets students from the mathematics background and closes the door to business students.	
Institution Name	**Credential Level and Program Name**
University of Waterloo	Master of Quantitative Finance (MQF)
Link to Program Web Page: https://uwaterloo.ca/statistics-and-actuarial-science/programs/graduate-programs/master-quantitative-finance	
Brief Program Description: The Master of Quantitative Finance (MQF) program focuses on the fundamental disciplines of mathematics, statistics, econometrics, computer science and finance. It provides the analytical tools to solve practical problems in the complex and rapidly evolving world of today's financial industry.	
What differentiates the new program from this existing program: The existing program targets students from the mathematics background and closes the door to business students. It also focuses on mathematical skills not data analytics.	
Institution Name	**Credential Level and Program Name**
York University	Master of Finance
Link to Program Web Page: https://schulich.yorku.ca/programs/mf/	
Brief Program Description: The intensive 12-month MF places a strong emphasis on real-world application and on technical, communication and decision-making skills.	
What differentiates the new program from this existing program: The existing program does not have any data analytics component. Instead our program will have data analytics like machine learning.	

2 Program Requirements

a) Admission Requirements

- *Outline the formal admission requirements; explain how these are appropriate for the program learning outcomes: How will they help to ensure students are successful? How do they align with the learning outcomes of the program?*
- *Explain any additional requirements for admission to the program such as special language, portfolio, etc. (and how the program recognizes prior work or learning experience, if applicable)*
- *Indicate the programs from which students may be drawn*

In addition to the general admission requirements for graduate studies, MFDA applicants must meet the following program-specific requirements.

Hold a bachelor's degree in one of the two streams. Stream A is quantitative stream and the applicants' background includes information technology, computer science, modelling and computer science, engineering, mathematics, statistics, physics, actuarial science, or other quantitative fields. Stream B is business stream and the applicants' background includes business, economics, and finance.

All applicants—except those with a graduate or undergraduate degree from a Canadian or American Universities—must complete the GMAT or GRE.

A statistics course is required. Linear algebra and calculus are highly recommended.

We will work with the School of Graduate and Post-doctoral Studies and the Registrar's office to develop mechanisms to ascertain communication skills during the admissions process.

b) Program Learning Outcomes and Assessment of Student Knowledge

- *In Table 3 below, please describe what the student will know or be able to do (knowledge, methodologies, and skills) by the end of the program and indicate how that knowledge or skill will be demonstrated*
- *An example has been provided in purple in the first row and can be removed.*
- ***Connect with the Quality Enhancement Analyst in CIQE (ciqe@ontariotechu.ca) early in the program development to review learning outcomes.***

Degree Level Expectations are set by the Quality Council of Ontario and should not be modified. For the list of and more information on these expectations, including a detailed description, visit their website.

The degree requirements and structure of the curriculum have been designed to be consistent with the institution's mission and academic vision. This has been accomplished by focusing on the institution's mission statements when crafting the program learning outcomes that will guide the curriculum at the course level, the learning activities and assessments. The program requirements allow graduates exposure to "technology-enriched" environments and allow them to participate in the "evolving workplace" through in-class experiential learning opportunities and internship option. The program's integration of finance and data analytics skills with practice in real-world settings, aligns with the institution's vision for academic programs that will "inspire graduates to make an impact on the world, as it is, and as it will be". As the institution does not have its own set of degree level expectations, the program utilized the graduate degree level expectations set out by OCAV in order to create appropriate outcomes. Below are these degree level expectations discussed in relation to the developed program learning outcomes.

Table 3: Program Learning Outcomes

Program Learning Outcomes By the end of the program, students graduating will be able to… (normally 6-8 outcomes per program with 12 being the maximum)	Degree Level Expectations (list all that apply; you must align with each expectation at least once)	Relevant courses (provide course code and course title)	Assessment of Learning Outcomes (e.g. test, rubric, self-assessment, etc.)
Appraise economics, financial reports, financial markets and securities	Depth and breadth of knowledge; Research and scholarship; Level of application of knowledge; Professional capacity / autonomy; Level of communications skills; Awareness of limits of knowledge.	MFDA5100 Financial Management; MFDA5200Investment; MFDA5300 Financial Derivatives Securities; MFDA5400 Financial Econometrics; BUSI 5010 Foundations of Business; BUSI5100 Accounting Systems	Test / Assignment/ Project / Presentation
Evaluate and manage financial risk	Depth and breadth of knowledge; Research and scholarship; Level of application of knowledge; Professional capacity / autonomy; Level of communications skills; Awareness of limits of knowledge.	MFDA5300 Financial Derivatives Securities; MFDA5400 Financial Econometrics; MFDA5500 Financial Risk Management;	Test / Assignment/ Project / Presentation

Apply data analytic skills to financial securities and portfolios	Depth and breadth of knowledge; Research and scholarship; Level of application of knowledge; Professional capacity / autonomy; Level of communications skills; Awareness of limits of knowledge.	MFDA5400 Financial Econometrics; MBAI 5300G Programming and Data Processing	Test / Assignment/ Project / Presentation
Solve business problems utilizing analytics tools, methodologies, and programming skills	Depth and breadth of knowledge; Research and scholarship; Level of application of knowledge; Professional capacity / autonomy; Level of communications skills; Awareness of limits of knowledge.	MFDA5400 Financial Econometrics; MBAI5100 Business Analytics; MBAI 5300G Programming and Data Processing; MBAI 5310 Artificial Intelligence Programming	Test / Assignment/ Project / Presentation
Design and manage databases for business decision making	Depth and breadth of knowledge; Research and scholarship; Level of application of knowledge; Professional capacity / autonomy; Level of communications skills; Awareness of limits of knowledge.	MFDA5400 Financial Econometrics; MBAI 5300G Programming and Data Processing	Test / Assignment/ Project / Presentation

- *Selecting a few examples from above, explain in detail how the program design and requirements support the attainment of the Program Learning Outcomes*
- *With assistance from the Academic Planning Officer in CIQE (ciqe@ontariotechu.ca), please provide further details on the Assessment of the Program Learning Outcomes, as outlined in the Quality Council's Quality Assurance Framework Section 2.1.6 - Assessment of teaching and learning:*
  - *Appropriateness of the proposed methods for the assessment of student achievement of the intended program learning outcomes and Degree Level Expectations (How will students demonstrate they have learned and can do what we expect them to by the end of the program?).*
  - *Completeness of plans for documenting and demonstrating the level of performance of students, consistent with the Degree Level Expectations (How will the effectiveness of the program be assessed?)*

MFDA is designed in a manner that allows students to attain the desired learning outcomes and associated degree-level expectations (DLEs) through-out their program. An example of this consideration would be the program learning outcome, “Appraise economics, financial reports, financial markets and securities”, which is aligned with “Depth and Breath of Knowledge” and other DLEs. To attain this outcome, students will have to participate in courses to develop the foundational learning in introductory courses (e.g. MFDA5100, BUSI5010, BUSI5100), but then will have the opportunity to become more proficient in their demonstration of these understandings in and discipline-specific courses (e.g. MFDA 5200, MFDA5300). By appropriately integrating the PLO into core introductory courses and then senior courses, the intent is to have students be exposed to this PLO gradually with the goal of achieving the PLO by graduation.

In addition, PLOs have been developed to align with multiple DLEs. An example of this is scaffolding of the above PLO, “Appraise economics, financial reports, financial markets and securities” which aligns with the “Level of application of knowledge” DLE. In the design of the PLOs, Faculty considered the usage of Bloom’s taxonomy when building them to ensure that students were moving up the tiers progressively in the hopes of limiting the ‘gaps’ of learning achievement. The intention behind this scaffolding is to build student achievement in the knowledge of the methodologies they need and then the application of these methodologies. This allows students the opportunity to demonstrate that they know “economics, financial reports, financial markets and securities” and then apply these knowledges to problem solving activities in other courses (e.g. MFDA5400).

The intentionally of the program design and scaffolding of the PLOs is also embedded into the proposed methods of assessment for student achievement. Again, taking into consideration Bloom’s taxonomy and the associated verbs that were chosen, assessment methods have been scaled in to allow students to achieve their learning at an introductory phase, then to develop that learning with the aim to become proficient. An example of this would be the PLO, “Apply data analytic skills to financial securities and portfolios” which has multiple learning activities that will assess the application of the principles and skills. This PLO will be assessed through tests, assignments, projects, and presentations; allowing student learning to be assessed through various activities and methods.

The plan for assessing and monitoring program effectiveness, in addition to the cyclical program review process, will be in accordance with the requirements laid out by the institution’s Academic Resource Committee. Currently this requires a report one-year after start-up and if there are areas of concern a subsequent 18-month report will be required. The one-year report will ask the program to review enrolment data, admission averages, and provide an analysis of successes and challenges encountered in the first year. After the first year of the program being implemented, it will be internally assessed by this committee and, if needed, recommendations will be made to enhance program effectiveness and student success. If required, the 18-month report will address key curricular and student data (e.g. student evaluations, GPA, retention data, etc.) as well as

any outstanding recommendations from the one-year report. Pending the committee's review, further documentation may be required of the program for ongoing monitoring.

Experiential learning is the crux of this program. Students are expected to gain sufficient knowledge and experience in the field of financial data analytics required to be hired in the quantitative finance sector upon graduation.

Finance courses (i.e. MFDA 5100, 5200, 5300, 5400, 5500) are designed such that students can understand and apply financial theories in practice. Moreover, students are expected to learn how to design, create and evaluate financial products in these courses. The data analytics courses (i.e. MBAI 5100, 5300, 5310) act as enablers and help students better apply financial theories in practice and evaluate financial products with finance-sector live data.

The first set of these learning outcomes is assessed with a series of tests (short quizzes, midterms, …). The second set of learning outcomes are assessed with projects and presentations. All classes have practical term projects that explore the applications of the course outcome in the finance industry, using up-to-date financial data that we provide in the finance lab. As an example for the Assessment of Learning Outcomes below we present the assessment approach for MFDA5300 Financial Derivatives Securities, which uses a broad range of methods:

In this class as tabulated in Table 3, the assessment is based on a combination of Test / Assignment/ Project / Self-reflection / Presentation.

1. Test-based assessments and Assignments will be used to evaluate the depth and breadth of knowledge as well as the level of application of knowledge. There will be biweekly in-class quizzes and two midterms to assess how students remember, understand and apply financial theories surrounding derivatives securities. There will be weekly assignments in between these tests to further assess the level of application of knowledge gained in this class.
2. Term Project will be the other method to evaluate the level of application of knowledge for this course. More specifically, students' ability to apply, design and create financial products are assessed with a term project on the valuation of financial derivatives using high frequency data on stock and bond prices.
3. Lastly, the level of communication skills as well as the students' ability to analyze and evaluate is also assessed with self-reflection, in-class discussion and critic of other teams' projects/presentations.

c) Program Structure and Content

- *Describe the requirements and structure of the program. Is it full-time/part-time? Is this an online or partially online program? What are the unique curriculum or program innovations or creative components in this program?*

- *Provide evidence that each graduate student is required to take a minimum of two-thirds of the course requirements from among graduate-level courses*
- *What is the program length? Provide a rationale for the length that ensures the program requirements can be reasonably completed*
- *Address how the programs structure will help students to meet the program learning outcomes and Degree Level Expectations*

It is a 24-month full-time program including eight courses and a choice of internship or projects. The courses cover finance and data analytics skills. The courses on data analytics skills are cross-listed with those from the MBAI program. Students can take other electives approved by the program director.

The program is unique in four aspects:
First, its unique curriculum combines finance, informatics, and data science, especially AI programming and applications. Other universities' programs are either pure finance or mathematics in finance, which ignore the practical skills of programming, AI, and database management.

Second, it is open to students from two different backgrounds: business or quantitative areas. Other programs are open to only one stream.

Third, it is the only program to aim for both CFA and FRM accreditation while other programs aim for one or no accreditation. CFA is the most-demanded accreditation in the finance sector. FRM is the specialized accreditation in the financial risk management area and is becoming more and more important after the 2008 financial crisis and the Pandemic. FRM only accredits master's programs. We are going to apply for both accreditations and already have a letter of support from FRM (Please see Appendix G). FRM allows for programs to be accredited before program launch and are able to add this accreditation into marketing materials. We are currently in talks with CFA.

Fourth, experiential learning is built into all courses and internship/ projects.

Five finance courses are new graduate level courses. Other courses are MBAI courses or other graduate courses approved by the program director. Students can use the finance lab (SIRC 4173) for courses and research projects and Leadership Innovation lab (SIRC 3120) for networking.

The normal length is 24 months. However students can finish in 12-24 months depending on the number of courses per semester they take and the length of the internship/ projects.

Core courses:
MFDA5100 Financial Management
MFDA5200 Investment

MFDA5400 Financial Econometrics

Electives (take five):
MFDA5300 Financial Derivatives Securities
MFDA5500 Financial Risk Management
MBAI 5100 Business Analytics
MBAI 5300 Programming and Data Processing
MBAI 5310 Artificial Intelligence Programming

Electives for non-Business Graduates

Students with a non-Business undergraduate degree can select from the courses below to replace the MBAI electives listed above.

BUSI 5010 Foundations of Business

BUSI 5100 Accounting Systems

Students also need a choice of MFDA 5600 Applied Financial Data Analytics Project (6CR) or MFDA 5700 Financial Data Analytics Internship(6CR)

The program length is 24 months for full -time students.

Recommended Program Map

Year	Fall	Winter	Spring/summer start
1	MFDA5100 Financial Management	MFDA5300 Financial Derivatives Securities	
1	MFDA5200 Investment	MFDA5400 Financial Econometrics	
1	MBAI 5300G Programming and Data Processing	MFDA5500 Financial Risk Management	
2	MBAI5100 Business Analytics	MBAI 5310 Artificial Intelligence Programming (pre-req 5300)	
2	Internship/ projects	Internship/ projects	

Early-graduation Program Map

Fall	Winter	Spring/Summer start
MFDA5100 Financial Management	MFDA5300 Financial Derivatives Securities	Internship/ projects
MFDA5200 Investment	MFDA5400 Financial Econometrics	
MBAI5100 Business Analytics	MFDA5500 Financial Risk Management	
MBAI 5300G Programming and Data Processing	MBAI 5310 Artificial Intelligence Programming (pre-req 5300)	

- *Describe the ways in which the curriculum addresses the current state of the discipline*
- *For researched-focused graduate programs, provide a clear indication of the nature and suitability of the major research requirements for degree completion*

Master of Financial Data Analytics is completely new in Ontario. We have based our curriculum on best practices in the United States and other provinces of Canada. The finance courses are based on the curriculum of CFA and FRM. The data analytics courses are cross-listed with MBAI, whose learning outcomes meet the Certified Analytics Professional content by INFORMS.

- *Is there an experiential learning component (e.g. workplace learning, co-op, internship, field placements, service learning, mandatory professional practice) to the program? If yes, please describe this component in 2500 words or less. Include confirmed partners, duration of the experiential learning component(s), and projected number of placements (where applicable)*

The experiential learning components in the program includes:
(1) Advisory board.
(2) Student investment fund that the advancement department has been working on.
(3) Use of the finance labs with the database and tools.
(4) Internship/projects
(5) Data analytics in every course.

The advisory board members can include executives of financial institutions, alumni, and donors to the student investment fund. Board members will help us to keep the curriculum up-to-date and relevant, build a network of potential employers and industrial contacts, mentor students, suggest and serve as guest lecturers, and help with job placement.

The enhanced involvement of financial industry practitioners is a key to success. We will involve practicing industry professionals in courses and extracurricular programming.

Computer programming is a key skill that graduates will need to play the proposed roles in their jobs after graduation. Applicants are assumed to have various levels of skills in programming upon arrival. The program includes an orientation bootcamp which covers "getting started with programming in Python". The orientation bootcamp is offered before the start of the program. It is offered by MBAI and will be open to students in this proposed program.

The courses, for example, MBAI 5300 "Programming and Data Processing", will help students with no programming background to start programming. All finance courses incorporate data analytics and programming. The courses and bootcamp will feature a high level of hands-on experiential learning supported by TAs and tutorials.

- *Describe how the potential need to provide accessibility accommodations has been considered in the development of this program*

Please see Procedures for Academic Accommodation for Students with Disabilities https://usgc.ontariotechu.ca/policy/policy-library/policies/legal,-compliance-and-governance/procedures-for-academic-accommodation-for-students-with-disabilities.php

d) Calendar Copy with Program Map(s)

- *Provide, as Appendix A, a clear and full calendar copy. Please use the template provided in Appendix A to create the Calendar Copy for the new program. This template ensures consistency across all programs in the Academic Calendar*
  - *If the program is to be accredited, include with this Appendix the accreditation tables, if available*
- *Provide, as Appendix B, a full list of the all courses included in the program including course numbers, titles, and descriptions. Please indicate clearly whether they are new/existing. Include full course proposals for new courses, and the most recent course syllabi for existing courses. If you are making changes to existing courses, include instead a course change form.*

Please see Appendix A for proposed calendar copy.

Please see Appendix B for a full list of the course numbers and titles with course proposals and syllabi.

3 Consultation

- *Describe the expected impact of the new program on the nature and quality of other programs delivered by the home and collaborating Faculty(ies) and any expected impact on programs offered by other Faculties*
- *Outline the process of consultation with the Deans of Faculties that will be implicated or affected by the creation of the proposed program*
- *Provide letters of support for the program from Deans at Ontario Tech and/or from other institutions/partners*

The program is provided by FBIT. The data analytics courses are cross-listed with MBAI in FBIT. This program is supported by Dr. Michael Bliemel, the dean of FBIT. GARP has provided a letter of support.

Does this Program/Change contain any Indigenous content? ☐ Yes ☒ No ☐ Unsure

For more information on how Indigenous content is defined at Ontario Tech University and how to consult with the Indigenous Education Advisory Circle (IEAC), please refer to the Protocol for Consultation with the Indigenous Education Advisory Circle.

Has the IEAC been contacted ☐ Yes ☐ No

If yes, when?

What was the advice you received from the IEAC, and how has it been included in your proposal?

Did the IEAC ask you to return the proposal to them for review? ☐ Yes ☐ No

If yes, have they completed their review? ☐ Yes ☐ No ☐ N/A

4 Resource Requirements

a) General Resource Considerations

- *Note here if this new program may impact significant enrolment agreements with the Faculty/Provost's office.*
- *Indicate if the new program will affect any existing agreements with other institutions, or will require the creation of a new agreement. Please consult with CIQE (ciqe@uoit.ca) regarding any implications to existing or new agreements.*

This program is fundamentally different from programs in other faculties. So, it will not affect their enrollment. It will not affect any existing agreements or require new agreement with other institutions.

b) Faculty Members - Current and New Faculty Requirements

- *Brief statement to provide evidence of the participation of a sufficient number and quality of faculty who will actively participate in the delivery of the program*
- *The role of any sessional faculty*
- *The provision of supervision of experiential learning opportunities; how will supervisory loads be distributed?*
- *The plan to provide additional faculty resources to support the program, if needed*
- *Complete Appendix C, detailing the list of faculty committed to the program (template in Appendix) and provide any additional details, if necessary; the information in the Appendix or additional information must include clear evidence that faculty have the recent research or professional/clinical expertise needed to sustain the program, promote innovation, and foster an appropriate intellectual climate.*
- ***If new faculty resources are needed, describe the plan and commitment to provide these resources to support the program and the rationale in section 4g)***

The Faculty of Business and IT has the expertise and capability to deliver the program with existing faculty who would be reassigned to the MFDA from other teaching duties. The budget of MFDA allocates two hires in the context of the overall faculty budget and subject to enrolment targets to facilitate this increase in teaching capacity and project supervision in the Faculty as part of our growth strategy. Sessional hires indicated in the first years of the budget will be utilized to cover undergraduate courses, freeing up FBIT experts to teach in the Graduate Programs. Normally only tenured and tenure-track professors will teach and supervise MFDA students. Teaching faculty or sessional faculty with Ph.D. or solid financial expertise can be considered. Please see Appendix C for the list of graduate faculty and Section 4g below for more information.

c) Additional academic and non-academic human resources

- *Give details regarding the nature and level of Sessional Instructor and TA support required by the program, the level of administrative and academic advising support, etc.*

- ***If new resources are needed, describe the plan and commitment to provide these resources to support the program and the rationale in section 4g)***

TA hours will be scaled up as needed based on enrollment. Please see Section 4g below. TAs will be recruited from second year MFDA students as well as from our pool of Master and Doctor of Computer Science Students. The Computer Science graduate program is shared with the Faculties of Science, Engineering and Applied Science and Business and IT (FBIT).

d) Existing non-financial student supports

All graduate students have access to an extensive support system that ensures a quality student experience. In addition to the outlined services below, students may also take advantage of the Campus Childcare Centre, Campus Bookstores, Housing and Living Resources, as well as the Student Union. Further information can be found at:
http://studentlife.uoit.ca/

Faculty-Specific Support

Academic Advising (if relevant)

Graduate Academic Advisor who will support the program director with administration, student process management, and recruitment initiatives for all the graduate programs in FBIT.

School of Graduate and Post-Doctoral Studies

Quality graduate and postdoctoral education combines teaching, research, professional development, disciplinary community involvement and personal growth. It is by nature a shared responsibility between students, faculty members, the programs and a large number of support units, with overarching administration being provided by the School of Graduate and Postdoctoral Studies.

The School of Graduate and Postdoctoral Studies furthers the scholarly mission of the university by providing academic and administrative support to the university's postgraduate educational, research, innovation and international activities. Our responsibilities include graduate program development, graduate enrolment management, oversight of academic and quality standards, and the implementation of policies and practices that enhance graduate/postdoctoral scholarly success, career readiness and personal growth. SGPS supports prospective, new and current graduate students through many administrative services including, but not limited to, recruitment, admission, registration, funding and scholarships, orientation, professional development workshops and events, and processing of final theses, projects and papers. SGPS is a single-point-of-contact, multifunctional administrative unit tailored to the complete "life-cycle" of graduate students, providing coordinated support to students and all other stakeholders.

Student Life

Student Learning Centre

The Student Learning Centre fosters a high level of academic excellence in the Ontario Tech community by working with all Ontario Tech students, undergraduate and graduate, to achieve educational success. Foundational knowledge and prerequisite skills are essential to all university level courses, and competency with these skills is vital for strong academic performance. The subject specialists offer support services in mathematics, writing, study skills, ESL and physics. With the additional support of peer tutors and workshops, the Centre can further accommodate the needs of a specific course or program.
http://studentlife.uoit.ca/student-learning/

Student Accessibility Services

The staff work as a collaborative team to ensure students with disabilities have equal opportunities for academic success. The SAS operates under the Ontario Human Rights Code (OHRC) and the Accessibility for Ontarians with Disabilities Act (AODA). Services are provided for students with documented disabilities. Accommodation supports include but are not limited to:

- Adaptive technology training;
- Alternate format course material;
- Learning skills support;
- Testing support; and
- Transition support for incoming students.

Careers and Internships

The Career Centre offers comprehensive career service assistance and a variety of valuable resources to help students along their career paths:

- Assistance with creating effective job-search documents;
- Career Counselling;
- Interview preparation;
- Job market information; and
- Job search strategies.

A variety of events hosted on campus during the academic year including employer information and networking sessions, job fairs, and interviews conducted by leading employers.

Student Engagement and Equity

The Student Engagement and Equity supports students' successful transition into the university and provides opportunities for them develop your leadership and professional skills throughout their university career.

Services provided through Student Engagement and Equity includes:

- Orientation and events through first year
- Specialized programming for first generation, graduate, indigenous, international, mature, online, transfer, and diploma-to-degree pathways students
- Equity and inclusivity programming
- Assistance and advice for living off campus

- Peer mentoring to help students through first year
- Opportunities to grow and develop leadership skills through the Ambassador program.

Student Mental Health Services

Student Mental Health Services helps students learn how to better manage the pressures of student life. Students can:

- Attend a drop-in session;
- Participate in events and activities that promote positive health and well-being;
- Access tools and resources online to learn about mental health and how to maintain good health and wellness;
- Work with a mental health professional to address concerns;
- Contact the Student Lifeline for immediate help and assistance; and
- Get answers to frequently asked questions about mental health.

Student Mental Health Services offers short-term counselling and therapy services to students. Students in distress will also be provided support and counselling as needed. There is no cost and services are confidential. For students who need long-term counselling support or specialized mental health services, UOIT will provide referrals to assist the student in accessing resources in the local community or in the student's home community.

Athletics and Recreation Faculties

UOIT offers a number of recreation facilities and fitness opportunities to meet all lifestyles and needs. On-campus facilities include the state-of-the-art FLEX Fitness Centre which overlooks Oshawa Creek, five gymnasiums, a 200-metre indoor track, two aerobic/dance studios, the Campus Ice Centre, Campus Fieldhouse, a soccer pitch, a fastball diamond, squash courts and an indoor golf-training centre.

Campus Health Centre

The Campus Health Centre provides assistance in numerous confidential health-care options including:

- A medical clinic with daily access to physician and nursing staff;
- Allergy injections, immunizations and influenza injections;
- An on-site laboratory (blood work, STI testing, throat swabs, etc.);
- Treatment of disease, illness and injury;
- Complementary Health Services featuring acupuncture, chiropractic, custom orthotics, massage therapy, nutritional counselling and physical therapy; and
- Gynaecological health-care and prescriptions.

Student Awards and Financial Aid

Student Awards and Financial Aid (SAFA) is dedicated to helping students understand the variety of options available to finance their education. Budgeting and financial planning are essential to their success and Student Awards and Financial Aid is on hand to help create the right financial plan. Financial assistance can be in the form of bursaries, employment (both

oncampus and off), parental resources, scholarships, student lines of credit and the Ontario Student Assistance Program (OSAP).

Information Technology Resources

IT Services strives to provide quality services to students at Ontario Tech. To support these objectives, the following components are included:

- Wireless network
- Wired network
- IT Service Desk
- General workstations
- Printing services

Wireless network
Wireless internet connection is available in public areas and open-air locations around the Ontario Tech campus where students congregate (North Oshawa and Downtown locations).

Wired network
To ensure the success of the technology-enriched learning environment, a comprehensive data network has been installed on campus. This includes a network drops in lecture halls and designated areas as well as network drops for each residence suite.

Ontario Tech students benefit from networked classrooms and learning spaces. Each ergonomically-designed space has data network connection access and electrical connections to ensure battery regeneration. In addition, classrooms include electronic projection equipment and full multimedia support.

Teaching & Learning Centre
The mission of the Teaching and Learning Centre (TLC) at Ontario Tech is to empower faculty to reach their potential as educators and to create a culture where effective teaching is valued. We champion the scholarship of teaching and implementation of pedagogy. We create valuable teaching and learning professional development experiences. We move UOIT towards being a leader in teaching excellence, ultimately leading to greater student success.

The TLC provides faculty with a range of tools and facilities to assist them in providing a rich learning experience for students. Experts at the TLC provide support in various areas including curriculum development, multimedia design, learning technology and in the overall improvement of teaching practice.

In addition, the TLC funds teaching-related projects from the Teaching Innovation Fund (TIF) for proposals by faculty members aimed at developing new methods in teaching and learning. The TLC facilitates teaching awards at the University and supports faculty in their application for external awards and funding opportunities that focus on teaching and learning.

e) Graduate student financial support

- *Provide evidence that financial assistance will be sufficient to ensure quality and numbers of students*
- *Provide the teaching assistant hours and capacity within the Faculty*

We do not intend to provide direct financial support to students initially. We will seek out support from industry partners for scholarship opportunities and work with local financial institutions to secure financing options for students. As the program grows, we can use tuition to provide financing options for selected students.

f) Physical resource requirements

- *Please attach a report, as Appendix E, from the Library regarding existing library holdings and support for student learning*
- *Address any space/infrastructure requirements including information technology, laboratory space, equipment, etc. If new space is required, please complete Table 4; otherwise, please remove this Table*
- *Ideally, please provide information on the change in the number of faculty, students, administrative staff, etc. as well as information on changes in equipment and activities (additional space; the renovation of existing space; or will the current space allocation accommodate the new program)*
- *The plan to provide additional resources to support the program, if needed*

Please see the attached library report in Appendix E. No new space is needed.

g) Resource Summary

Provide a brief statement of the funding requirements and the rationale.

We will be applying to the Ministry to have this program eligible for grant funding. Master of Financial Data Analytics (MFDA) is a new market-oriented business graduate program. To deliver the program, we need new faculty members to teach the courses, technical resources to do analytics with financial data, and other resources to market and manage the program.

<u>Human Resource Requirements</u>

Are additional faculty required to be able to offer this program? ☒ Yes ☐ No

If yes, what year will the faculty hire be required, and are there additional criteria associated with the hiring requirement (e.g. enrolment levels)?

In 2022-2023, sessional instructors will be hired to teach 5 courses. In 2023-2024, sessional instructors will be hired to teach 4 courses. In 2023-2024, a tenured and tenure track professor will be hired. In 2024-2025, a teaching faculty will be hired. The two hires are in the context of the overall faculty budget and subject to enrolment targets to facilitate increase in teaching capacity and project. Sessional hires indicated in the first years will be utilized to cover undergraduate courses, freeing up FBIT experts to teach in the Graduate Programs.

Are additional staff required to be able to offer this program? ☐ Yes ☒ No

If yes, please outline what year the staff hire will be required and any additional criteria associated with the hiring requirement:

Space Requirements

Are there additional space requirements specific to being able to successfully launch this program? ☐ Yes ☒ No

If yes, please provide additional details:

Technology Requirements

Are there additional technology requirements specific to being able to successfully launch this program? ☒ Yes ☐ No

If yes, please provide additional details:

WRDS with CRSP/Compustat and EIKON is needed.

Additional Resource Requirements

Are there additional resource requirements not specified above that are required to successfully launch this program? If so, please outline them below:

Additional TA hours will be required as enrollment increases.

The resource requirements outlined above have been reviewed and approved by the Academic Resource Committee (ARC): _____*October 15, 2020 , March 2021*
(date of review)

5 Quality and Other Indicators

- *Please describe the appropriateness of the collective faculty expertise to contribute substantively to the proposed program; areas of faculty strength and expertise, innovation, and scholarly record will contribute to the quality of the program and student experience*
- *Please explain how the program structure and faculty research will ensure the intellectual quality of the student experience*
- *Refer to Appendices C and D, and provide information on how the research experience, current projects, and funding contribute to the quality of the program*

Faculty expertise supporting the proposed program is substantive, with 24 full time faculty who all have PhDs., and 20 of which are tenured / tenure track professors with many peer reviewed publications related to courses in the program. Many faculty also have extensive supervisory experience, and grant funding. Most of the 4 full time teaching faculty participating in the program are also active in research, and can supervise graduate projects. Summaries of the Faculty can be found in Appendix C.

The faculty participating in the program hold expertise in Finance, Math, Statistics, Artificial Intelligence, Programming, Management Information Systems, Legal Aspects of Analytics in Business, Marketing, Operations Research, Ethics, Privacy, Trust and Fairness, Big Data Systems, as well as Data Visualization and Strategic Management. Details can be found in Appendix D.

APPENDICES

Please include at minimum the below. Additional Appendices may be added, as appropriate.

A: Calendar Copy with Program Maps
B: List of Program Courses, New Course Proposals, Required Course Changes, Course Syllabi for Existing Courses
C: Detailed Listing of Faculty Committed to the Program
D: Library Report
E: Letter of Support

Appendix A – Calendar Copy

Program

Graduate faculty
Include a bulleted list of graduate faculty affiliated with the program (graduate and associate).

- Amirali Abari, BS, MSc, PhD
- Amir Akbari, BSc, MBA, PhD
- Nader Azad, BS, MSc, PhD
- Michael Bliemel, BSc, MMS, PhD
- Bin Chang, BA, MA, PhD
- Ana Duff, BSc, MSc, PhD
- Patrick Hung, BSc, MASc, MPS, PhD
- Stephen Jackson, BSc, PhD
- Chinmay Jain, BTech, PhD
- Ying Jiang, BA, MPhil, PhD
- Amin Ibrahim, BASc, MASc, PhD
- Karolina Krystyniak, BBA, MA, PhD, CFA
- Fletcher Lu, BMath, MMath, PhD
- Stephen Marsh, BSc, PhD
- Samaneh Mazaheri, BSc, MSc, PhD
- Carolyn McGregor, AM, PhD, BAppSc, SMIEEE
- Theresa Miedema, BA, LL.B, SJD
- Amir Rastpour, BSc, MSc, PhD
- Karthik Sankaranarayanan, BSc, MSc, PhD
- Alexander Serenko, MBA, PhD
- Julie Thorpe, BCompSci, PhD
- Miguel Vargas Martin, BSc, MASc, PhD
- Wei-Lin Wang, BBA, MBA, PhD
- Hui Zhu, BSc, MA, PhD

Program information
Master of Financial Data Analytics (MFDA) aims to train highly qualified finance professionals with computational skills. MFDA is the first program in Canada to combine finance, information technology, and data analytics, especially AI programming and applications. Students are expected to gain sufficient knowledge and experience in the field of financial data analytics required to be hired in the financial data analytics sector upon graduation. Applicants can be from business/economics/finance background or mathematics/computer science/information technology/other quantitative areas.

The program helps students to prepare for Financial Risk Manager (FRM) and Chartered Financial Analyst (CFA) tests.

Admission requirements

In addition to the general admission requirements for graduate studies, MFDA applicants must meet the following program-specific requirements.

Hold a bachelor's degree in one of the two streams. Stream A applicants' background includes information technology, computer science, modelling and computer science, engineering, mathematics, statistics, physics, actuarial science, or other quantitative fields. Stream B applicants' background includes business, economics, and finance.

All applicants—except those with a graduate or undergraduate degree from a Canadian or American Universities—must complete the GMAT or GRE.

Statistics course is required. Linear algebra and calculus are highly recommended.

Degree requirements

Students are required to complete 8 courses and either an Applied Financial Data Analytics Project or a Financial Data Analytics Internship, for a total of 30 credits. Approximate time for program completion, based on full-time status, is 12-24 months.

Core courses:

MFDA5100 Financial Management
MFDA5200 Investment
MFDA5400 Financial Econometrics

Electives (take five):

MFDA5300 Derivatives
MFDA5500 Financial Risk Management MBAI
5100 Business Analytics
MBAI 5300 Programming and Data Processing
MBAI 5310 Artificial Intelligence Programming

Electives for non-Business Graduates

Students with a non-Business undergraduate degree can select from the courses below to replace the MBAI electives listed above.

BUSI 5010 Foundations of Business
BUSI 5100 Accounting Systems

Course listing

MFDA 5100 Financial Management
MFDA 5200 Investment

MFDA 5400 Financial Econometrics
MFDA 5300 Financial Derivatives Securities
MFDA 5500 Financial Risk Management
MFDA 5600 Applied Financial Data Analytics Project
MFDA 5700 Financial Data Analytics Internship
MBAI 5100 Business analytics
MBAI 5300 Programming and data processing MBAI 5310 Artificial Intelligence programing BUSI 5010 Foundations of Business
BUSI 5100 Accounting Systems

Course Code and Title	New/Existing
MFDA 5100 Financial Management	New
MFDA 5200 Investment	New
MFDA 5300 Financial Derivatives Securities	New
MFDA 5400 Financial Econometrics	New
MFDA 5500 Financial Risk Management	New
MFDA 5600 Applied Financial Data Analytics Project	New
MFDA 5700 Financial Data Analytics Internship	New
MBAI 5100 Business analytics	Existing – for MBAI
MBAI 5300 Programming and data processing	Existing – for MBAI
MBAI 5310 Artificial Intelligence programing	Existing – for MBAI
BUSI 5010 Foundations of Business	Existing
BUSI 5100 Accounting Systems	Existing

NEW COURSE TEMPLATE

For changes to existing courses see Course Change Template

Faculty: **Faculty of Business and IT**	
This new course is associated with: ☐ Minor Program Adjustment ☐ Major Program Modification ☒ New Program ☐ None	
Will this course appear anywhere other than the course description section of the Calendar?	☒ **Yes** ☐ **No**

If you answered yes to the above, please complete:

A new core course for an existing program, specialization or minor*: Minor Program Adjustment*

A new elective course for an existing program, specialization or minor, listed in the program map*: Course Sequencing or Course Placement*

A new course (core or elective) related to a Major Program Modification*: Major Program Modification*

Note: If the new course is for a new program, you do not need to show course placement as it will be captured in the new program proposal.

Programs impacted: [Please list all impacted programs including any applicable fields or specializations.]

Master of Financial Data Analytics

Calendar start date: (When the course should first appear in the Academic Calendar 2020-2021)

2022-2023

Registration start date: (The first time the course will be open for registration e.g. Fall 2020)

Fall 2022

Additional supporting information (optional; please indicate if you are attaching any additional documentation)

Subject Code: MFDA	**Course Number:** 5100G
Full Course Title: Financial Management	
Short-Form Course Title (max. 30 characters)**:** Financial Management	

Course Description

This is an introductory course in Finance. The course provides students with a framework to analyze individual and corporate investment and financing decisions. We will cover topics such as types of business organization, financial statements, time of money, the valuation of individual securities such as stocks and bonds considering return and risks, capital investments undertaken by corporations, corporate finance policies, and ethical and professional standards.

Credit Hours: 3		
Contact Hours – please indicate total number of hours for each component		
Lecture: 3	**Lab:**	
Tutorial:	**Other:**	
Cross-listings		
Prerequisites for Calendar		
Prerequisites for Banner		
Co-requisites		
Prerequisites with concurrency (pre or co-requisite)		
Credit restrictions	☐ **Equivalency***	
Recommended Prerequisites		
Course Restrictions		
Course Type	☒ **Core** ☐ **Elective** ☐ **Core or Elective**	
Is the course: ☐ Undergraduate ☒ Graduate ☐ Professional (e.g. some Education courses)		
Grading scheme	☒ **N (normal alpha grade)** ☐ **P (pass/fail)**	

***Equivalency:** If it is equivalent, students can retake either course. If it is not equivalent, students are not allowed to register in the restricted course.

Course instructional method:

CLS (In Class Delivery)	x	HYB (In Class and Online Delivery)	x
IND (Individual Studies)		OFF (Off Site)	
WB1 (Virtual Meet Time – Synchronous)		WEB (Fully Online – Asynchronous)	
Not Applicable			

Teaching and assessment methods:

Teaching method: Lecture and discussion/problem-solving in class.

Assessment: Midterm and final exam, periodic quizzes, projects.

Learning outcomes: (for assistance developing course learning outcomes, please refer to the Teaching and Learning website, or contact them at teachingandlearning@uoit.ca.)

On the successful completion of the course, students will be able to understand:

1. Describe the various types of business organizations and the relative advantages of each type.
2. Evaluate corporate financial performance by analyzing key financial statements
3. Understand the concept of Time Value of Money.
4. Value bonds and stocks.
5. Estimate firm's cost of capital.

6. Evaluate the profitability, business, and financial risk of different investment projects using different evaluation methods (i.e. capital budgeting).
7. Evaluate corporate financial policies including governance, capital structure, dividend and stock repurchase, working capital management, mergers and acquisitions and corporate restructuring.
8. Understand ethic and professional standards.

Does this course contain any experiential learning components? ☒ **Yes** ☐ **No**

If yes:

Case Study	x	Simulated Workplace Project	x
Consulting project/workplace project		Applied Research	
Field Experiences			
Other Types of Experiences:			

We have consulted with all impacted areas: ☐ **Yes** ☒ **NA**

Process of consultation, if applicable:

Does this course contain any Indigenous content? ☐ **Yes** ☒ **No** ☐ **Unsure**
For more information on how Indigenous content is defined at Ontario Tech University and how to consult with the Indigenous Education Advisory Circle (IEAC), please refer to the Protocol for Consultation with the Indigenous Education Advisory Circle.

Has the IEAC been contacted? ☐ **Yes** ☐ **No**

If yes, when?

What was the advice you received from the IEAC, and how has it been included in your proposal?

Did the IEAC ask you to return the proposal to them for review? ☐ **Yes** ☐ **No**

If yes, have they completed their review? ☐ **Yes** ☐ **No** ☐ **N/A**

Financial Implications

FACULTY INTERNAL APPROVAL DATES

Faculty Council approval	
Curriculum Committee approval	
Internal Committee approvals	

NEW COURSE TEMPLATE

For changes to existing courses see Course Change Template

Faculty: Faculty of Business and IT	
This new course is associated with: ☐ Minor Program Adjustment ☐ Major Program Modification ☒ New Program ☐ None	
Will this course appear anywhere other than the course description section of the Calendar?	☒ **Yes** ☐ **No**

If you answered yes to the above, please complete:

***A new core course for an existing program, specialization or minor**: Minor Program Adjustment*

***A new elective course for an existing program, specialization or minor, listed in the program map**: Course Sequencing or Course Placement*

***A new course (core or elective) related to a Major Program Modification**: Major Program Modification*

Note: If the new course is for a new program, you do not need to show course placement as it will be captured in the new program proposal.

Programs impacted: [Please list all impacted programs including any applicable fields or specializations.]

Master of Financial Data Analytics

Calendar start date: (When the course should first appear in the Academic Calendar 2020-2021)

2022-2023

Registration start date: (The first time the course will be open for registration e.g. Fall 2020)

Fall 2022

Additional supporting information (optional; please indicate if you are attaching any additional documentation)

Subject Code: MFDA	**Course Number:** MFDA 5200
Full Course Title: Investments	
Short-Form Course Title (max. 30 characters)**: Investments**	

Course Description

As core requirement for the Master of Financial Data Analytics program, the primary objective of this three-credit graduate course is to offer students a broad overview of key issues in investing and to prepare students for a future career in Finance. Through this course, we will examine how individual investors choose among investment alternatives, which have uncertain payoffs over different time horizons. This involves understanding the risk and return relationship for individual securities as well as portfolios of securities that characterizes the investment decision. The valuation of different securities will also be examined. These fundamental analyses are then applied to different investment instruments including common stocks, fixed income securities and mutual funds.

Credit Hours: 3	
Contact Hours – please indicate total number of hours for each component	
Lecture: 3	**Lab:**
Tutorial:	**Other:**
Cross-listings	
Prerequisites for Calendar	Financial Management or Corporate Finance Equivalent Business Statistics
Prerequisites for Banner	
Co-requisites	
Prerequisites with concurrency (pre or co-requisite)	
Credit restrictions	☐ **Equivalency**
Recommended Prerequisites	
Course Restrictions	
Course Type	☒ **Core** ☐ **Elective** ☐ **Core or Elective**
Is the course: ☐ Undergraduate	☒ Graduate ☐ Professional (e.g. some Education courses)
Grading scheme	☒ **N (normal alpha grade)** ☐ **P (pass/fail)**

***Equivalency:** If it is equivalent, students can retake either course. If it is not equivalent, students are not allowed to register in the restricted course.

Course instructional method:

CLS (In Class Delivery)	X	HYB (In Class and Online Delivery)	X
IND (Individual Studies)		OFF (Off Site)	
WB1 (Virtual Meet Time – Synchronous)		WEB (Fully Online – Asynchronous)	
Not Applicable			

Teaching and assessment methods:

Teaching methods: The course will integrate experiential learning into the regular lectures including in-class discussions and problem-solving, trading simulation, and case studies.

Assessment: Bloomberg Market Concept (BMC) assignment, Case/trading simulation assignments and term project presentations.

Learning outcomes: (for assistance developing course learning outcomes, please refer to the Teaching and Learning website, or contact them at teachingandlearning@uoit.ca.)

At the completion of the course, students should have a thorough understanding of investment mechanics and decision analyses, including portfolio theory, the use of various techniques to analyze stocks and bonds, and improvements in team skills.

Upon the completion of all four modules in BMC, students will earn a BMC certificate, which demonstrates practical knowledge regarding financial markets and increases competitive advantages of students' resumes.

The course would benefit students wishing to pursue a career in banking or investments, and appeal to students wishing to develop their professional career. Students who are interested in performing portfolio analyses and management, or are seeking accreditation as a Chartered Financial Analyst (CFA) will also find this course as a useful first step toward achieving this goal.

Topics to be covered but are not limited to:

1. The Basics of Financial Markets
    - Financial Markets and Asset Class
    - Trading on Securities Markets
2. Portfolio Theory
    - Risk and Return: Past and Prologue
    - Risk Aversion and Capital Allocation
    - Optimal Risky Portfolio (Case Projects)
3. Fixed Income Securities
    - Bond Prices and Yields valuation
    - Managing Bond Portfolio (Case Studies)
4. Equilibrium in Capital Markets (Optional)
    - The CAPM Model
    - Index Models and the APT
5. Equities and Portfolio Management
    - Equity Valuation
    - Active Portfolio Management (Equity Simulations/Case Studies)
    - Term Project Presentation

Does this course contain any experiential learning components? ☒ **Yes** ☐ **No**

If yes:

Case Study	Yes	Simulated Workplace Project	Yes
Consulting project/workplace project	Yes	Applied Research	Yes
Field Experiences			

Other Types of Experiences:
Financial data analytics: Securities Data Company (SDC) Platinum, Bloomberg Terminals, DataStream, and other data sources
Machine learning components: Integration of Python or Excel modelling into financial data analyses

We have consulted with all impacted areas: ☒ **Yes** ☐ **NA**

Process of consultation, if applicable:

Finance area and the dean, FBIT

Does this course contain any Indigenous content? ☐ **Yes** ☒ **No** ☐ **Unsure**
For more information on how Indigenous content is defined at Ontario Tech University and how to consult with the Indigenous Education Advisory Circle (IEAC), please refer to the Protocol for Consultation with the Indigenous Education Advisory Circle.

Has the IEAC been contacted? ☐ **Yes** ☐ **No**

If yes, when?

What was the advice you received from the IEAC, and how has it been included in your proposal?

Did the IEAC ask you to return the proposal to them for review? ☐ **Yes** ☐ **No**

If yes, have they completed their review? ☐ **Yes** ☐ **No** ☐ **N/A**

Financial Implications

Securities Data Company (SDC) Platinum, Bloomberg Terminals, DataStream, and other data sources Machine learning components: Integration of Python or Excel modelling into financial data analyses

FACULTY INTERNAL APPROVAL DATES

Faculty Council approval	
Curriculum Committee approval	
Internal Committee approvals	

NEW COURSE TEMPLATE

For changes to existing courses see Course Change Template

Faculty: BUSINESS AND INFORMATION TECHNOLOGY	
This new course is associated with: ☐ Minor Program Adjustment ☐ Major Program Modification X New Program ☐ None	
Will this course appear anywhere other than the course description section of the Calendar?	☒ **Yes** ☐ **No**

If you answered yes to the above, please complete:

A new core course for an existing program, specialization or minor*: Minor Program Adjustment*

A new elective course for an existing program, specialization or minor, listed in the program map*: Course Sequencing or Course Placement*

A new course (core or elective) related to a Major Program Modification*: Major Program Modification*

Note: If the new course is for a new program, you do not need to show course placement as it will be captured in the new program proposal.

Programs impacted: [Please list all impacted programs including any applicable fields or specializations.]

Master of Financial Data Analytics

Calendar start date: (When the course should first appear in the Academic Calendar 2020-2021)

2022-2023

Registration start date: (The first time the course will be open for registration e.g. Fall 2020)

Fall 2022

Additional supporting information (optional; please indicate if you are attaching any additional documentation)

Subject Code: MFDA	**Course Number:MFDA5300** *ensure the course code has not been previously used
Full Course Title: Financial Derivatives Securities	
Short-Form Course Title (max. 30 characters)**: Derivatives Securities**	

Course Description

This three-credit graduate course provides an advanced overview to financial derivatives and their application in risk management and investment. The main focus is on learning mechanisms, valuations, and application strategies of popular derivatives. By the end of this course, students will be able to design, price and apply custom-made derivatives to special investment and hedging needs. Business Analytics and Financial Managements are prerequisites. Strong knowledge of calculus and statistics is highly recommended.

Credit Hours: 3	
Contact Hours – please indicate total number of hours for each component	
Lecture:	**Lab:**
Tutorial:	**Other:**
Cross-listings	
Prerequisites for Calendar	
Prerequisites for Banner	
Co-requisites	
Prerequisites with concurrency (pre or co-requisite)	
Credit restrictions	☐ **Equivalency***
Recommended Prerequisites	
Course Restrictions	
Course Type	☐ **Core** ☒ **Elective** ☐ **Core or Elective**
Is the course: ☐ Undergraduate ☒ Graduate ☐ Professional (e.g. some Education courses)	
Grading scheme	☒ **N (normal alpha grade)** ☐ **P (pass/fail)**

***Equivalency:** If it is equivalent, students can retake either course. If it is not equivalent, students are not allowed to register in the restricted course.

Course instructional method:

CLS (In Class Delivery)	X	HYB (In Class and Online Delivery)	X
IND (Individual Studies)		OFF (Off Site)	
WB1 (Virtual Meet Time – Synchronous)		WEB (Fully Online – Asynchronous)	
Not Applicable			

Teaching and assessment methods:

The teaching method is comprised of lecture sessions, off-line studying, and experiential learning practices. **The assessment method is based on a series of assignments (weekly problem solving and a term project), written exams (pop quizzes, midterms and final exams), and active class participation.**

Learning outcomes: (for assistance developing course learning outcomes, please refer to the Teaching and Learning website, or contact them at teachingandlearning@uoit.ca.)

The focus in this class is mostly on UNDERSTANDING, APPLYING, ANALYZING, and EVALUATING stages of Bloom's learning taxonomy. More specifically:

- **Understand properties of financial derivatives (contracts and markets)**
  - **Risk in financial markets and approaches in risk management**
  - **Mechanics of derivatives markets:**
    - **Lock contracts**
    - **Option contracts**
  - **Properties of financial derivatives**
    - **Forward, Futures, SWAPS (IRS, FX, CDS, …)**
    - **European Options (Call, Put), Compound, American, Exotics options**
  - **Differentiate between derivatives**
- **Develop trading strategies**
  - **Hedging strategy against a specific risk**
  - **Speculative strategy**
  - **Arbitrage strategy**
  - **Determine important quantities related to each derivative contract**
- **Valuate financial derivatives**
  - **Arbitrage pricing theory**
  - **Binomial-tree framework**
  - **Black-Scholes-Merton (BSM)**
  - **Monte Carlo simulation**
- **Analyze financial derivatives**
  - **Sensitivity analyses and the Greeks calculation**
  - **Quantitative risk analyses such as EWMA, GARCH, VIX, and Value-at-risk**

Does this course contain any experiential learning components? **X Yes** ☐ **No**

If yes:

Case Study	YES	Simulated Workplace Project	YES
Consulting project/workplace project		Applied Research	YES
Field Experiences			
Other Types of Experiences:			

We have consulted with all impacted areas: ☐ **Yes** ☒ **NA**

Process of consultation, if applicable:

Does this course contain any Indigenous content? ☐ **Yes** ☒ **No** ☐ **Unsure**

For more information on how Indigenous content is defined at Ontario Tech University and how to consult with the Indigenous Education Advisory Circle (IEAC), please refer to the Protocol for Consultation with the Indigenous Education Advisory Circle.

Has the IEAC been contacted? ☐ **Yes** ☐ **No**

If yes, when?

What was the advice you received from the IEAC, and how has it been included in your proposal?

Did the IEAC ask you to return the proposal to them for review? ☐ **Yes** ☐ **No**

If yes, have they completed their review? ☐ **Yes** ☐ **No** ☐ **N/A**

Financial Implications

FACULTY INTERNAL APPROVAL DATES

Faculty Council approval	
Curriculum Committee approval	
Internal Committee approvals	

NEW COURSE TEMPLATE

For changes to existing courses see Course Change Template

Faculty: Faculty of Business and IT	
This new course is associated with: ☐ Minor Program Adjustment ☐ Major Program Modification ☒ New Program ☐ None	
Will this course appear anywhere other than the course description section of the Calendar?	☒ **Yes** ☐ **No**

If you answered yes to the above, please complete:

A new core course for an existing program, specialization or minor*: Minor Program Adjustment*

A new elective course for an existing program, specialization or minor, listed in the program map*: Course Sequencing or Course Placement*

A new course (core or elective) related to a Major Program Modification*: Major Program Modification*

Note: If the new course is for a new program, you do not need to show course placement as it will be captured in the new program proposal.

Programs impacted: [Please list all impacted programs including any applicable fields or specializations.]

Master of Financial Data Analytics

Calendar start date: (When the course should first appear in the Academic Calendar 2020-2021)

2022-2023

Registration start date: (The first time the course will be open for registration e.g. Fall 2020)

Fall 2022

Additional supporting information (optional; please indicate if you are attaching any additional documentation)

Subject Code: MFDA	**Course Number: MFDA5400**
Full Course Title: **Financial Econometrics**	
Short-Form Course Title (max. 30 characters)**:** **Financial Econometrics**	

Course Description

The course covers econometric methods as applied to finance, in particular financial security analysis, risk and portfolio management. It teaches students econometric theories, empirical methods, and gives students experience in estimating econometric models with financial data. Students will use professional financial databases to obtain financial data and statistical programming software for empirical research. The course is in line with the CFA curriculum requirements on Quantitative methods in Finance.

Credit Hours: 3	
Contact Hours – please indicate total number of hours for each component	
Lecture:	**Lab:**
Tutorial:	**Other:**
Cross-listings	
Prerequisites for Calendar	
Prerequisites for Banner	
Co-requisites	
Prerequisites with concurrency (pre or co-requisite)	
Credit restrictions	☐ **Equivalency***
Recommended Prerequisites	
Course Restrictions	
Course Type	☒ **Core** ☐ **Elective** ☐ **Core or Elective**
Is the course: ☐ Undergraduate	☒ Graduate ☐ Professional (e.g. some Education courses)
Grading scheme	☒ **N (normal alpha grade)** ☐ **P (pass/fail)**

***Equivalency:** If it is equivalent, students can retake either course. If it is not equivalent, students are not allowed to register in the restricted course.

Course instructional method:

CLS (In Class Delivery)	X	HYB (In Class and Online Delivery)	X
IND (Individual Studies)		OFF (Off Site)	
WB1 (Virtual Meet Time – Synchronous)		WEB (Fully Online – Asynchronous)	
Not Applicable			

Teaching and assessment methods:

The class will be heavily experiential in nature, with all the theoretical concepts accompanied by empirical application on real data. The students will be expected also to perform a term project on a chosen research topic, from hypothesis development, to data collection, choice of appropriate methodology and analysis.

Learning outcomes: (for assistance developing course learning outcomes, please refer to the Teaching and Learning website, or contact them at teachingandlearning@uoit.ca.)

- On the successful completion of the course, students will be able to:
- Understand the key mathematical and statistical techniques key to learning econometrics.
- Understand and apply the classical linear regression and multivariate regression models, as well as hypothesis testing and diagnostic testing in those models.
- Understand time-series models for historical analysis and forecasting.

• Understand panel data and its numerous applications in analysis of firms and industries. • Apply the econometric techniques in practice using the statistical software. • Describe, interpret and model real financial data.

Does this course contain any experiential learning components? ☒ **Yes** ☐ **No**

If yes:

Case Study		Simulated Workplace Project	
Consulting project/workplace project		Applied Research	Yes, se above in "Teaching and Assessment Methods"
Field Experiences			
Other Types of Experiences:			

We have consulted with all impacted areas: ☐ **Yes** ☒ **NA**

Process of consultation, if applicable:

Does this course contain any Indigenous content? ☐ **Yes** ☒ **No** ☐ **Unsure**

For more information on how Indigenous content is defined at Ontario Tech University and how to consult with the Indigenous Education Advisory Circle (IEAC), please refer to the Protocol for Consultation with the Indigenous Education Advisory Circle.

Has the IEAC been contacted? ☐ **Yes** ☐ **No**

If yes, when?

What was the advice you received from the IEAC, and how has it been included in your proposal?

Did the IEAC ask you to return the proposal to them for review? ☐ **Yes** ☐ **No**

If yes, have they completed their review? ☐ **Yes** ☐ **No** ☐ **N/A**

Financial Implications

FACULTY INTERNAL APPROVAL DATES

Faculty Council approval	
Curriculum Committee approval	
Internal Committee approvals	

NEW COURSE TEMPLATE

For changes to existing courses see Course Change Template

Faculty: **Faculty of Business and IT**	
This new course is associated with: ☐ Minor Program Adjustment ☐ Major Program Modification ☒ New Program ☐ None	
Will this course appear anywhere other than the course description section of the Calendar?	☒ **Yes** ☐ **No**

If you answered yes to the above, please complete:

A new core course for an existing program, specialization or minor*: Minor Program Adjustment*

A new elective course for an existing program, specialization or minor, listed in the program map*: Course Sequencing or Course Placement*

A new course (core or elective) related to a Major Program Modification*: Major Program Modification*

Note: If the new course is for a new program, you do not need to show course placement as it will be captured in the new program proposal.

Programs impacted: [Please list all impacted programs including any applicable fields or specializations.]

Master of Financial Data Analytics

Calendar start date: (When the course should first appear in the Academic Calendar 2020-2021)

2022-2023

Registration start date: (The first time the course will be open for registration e.g. Fall 2020)

Fall 2022

Additional supporting information (optional; please indicate if you are attaching any additional documentation)

Subject Code: MFDA	**Course Number:** MFDA5500 *ensure the course code has not been previously used
Full Course Title: **Financial Risk Management**	
Short-Form Course Title (max. 30 characters)**:** **Financial Risk Management**	

Course Description

This course introduces the main components of measuring and managing financial risk in financial service industry. It covers the foundation, valuation, and risk models. Students will use WRDS, Bloomberg Terminals, DataStream, and other data sources and programming software to apply risk modelling and management skills. By taking this course, the students will master skills and knowledge needed to anticipate and respond to critical issues in financial risk management and gain an edge in their career and professional development. The course is in line with the Financial Risk Manager (FRM) curriculum requirements on valuation and risk models.

Credit Hours: 3		
Contact Hours – please indicate total number of hours for each component		
Lecture: 3		**Lab:**
Tutorial:		**Other:**
Cross-listings		
Prerequisites for Calendar	MFDA5100 Financial Management	
Prerequisites for Banner		
Co-requisites		
Prerequisites with concurrency (pre or co-requisite)		
Credit restrictions		☐ **Equivalency***
Recommended Prerequisites		
Course Restrictions		
Course Type	☐ **Core** ☒ **Elective** ☐ **Core or Elective**	
Is the course: ☐ Undergraduate ☒ Graduate ☐ Professional (e.g. some Education courses)		
Grading scheme	☒ **N (normal alpha grade)** ☐ **P (pass/fail)**	

***Equivalency:** If it is equivalent, students can retake either course. If it is not equivalent, students are not allowed to register in the restricted course.

Course instructional method:

CLS (In Class Delivery)	X	HYB (In Class and Online Delivery)	X
IND (Individual Studies)		OFF (Off Site)	
WB1 (Virtual Meet Time – Synchronous)		WEB (Fully Online – Asynchronous)	
Not Applicable			

Teaching and assessment methods:

Teaching methods: 3 hour lectures a week.
Assessment: assignments and exams.

Learning outcomes: (for assistance developing course learning outcomes, please refer to the Teaching and Learning website, or contact them at teachingandlearning@uoit.ca.)

Identify and Evaluate financial risks
Calculate economic and regulatory capital
Conduct stress testing and scenario analysis
Hedge risk using various technologies

Model and manage country/sovereign risk

Does this course contain any experiential learning components? ☒ **Yes** ☐ **No**

If yes:

Case Study		Simulated Workplace Project	
Consulting project/workplace project		Applied Research	
Field Experiences			
Other Types of Experiences: Students will use WRDS, Bloomberg Terminals, DataStream, and other data sources to apply risk modelling and management skills.			

We have consulted with all impacted areas: ☐ **Yes** ☒ **NA**

Process of consultation, if applicable:

Does this course contain any Indigenous content? ☐ **Yes** ☒ **No** ☐ **Unsure**

For more information on how Indigenous content is defined at Ontario Tech University and how to consult with the Indigenous Education Advisory Circle (IEAC), please refer to the Protocol for Consultation with the Indigenous Education Advisory Circle.

Has the IEAC been contacted? ☐ **Yes** ☐ **No**

If yes, when?

What was the advice you received from the IEAC, and how has it been included in your proposal?

Did the IEAC ask you to return the proposal to them for review? ☐ **Yes** ☐ **No**

If yes, have they completed their review? ☐ **Yes** ☐ **No** ☐ **N/A**

Financial Implications

WRDS, Bloomberg Terminals, DataStream, and other data sources

FACULTY INTERNAL APPROVAL DATES

Faculty Council approval	
Curriculum Committee approval	
Internal Committee approvals	

NEW COURSE TEMPLATE

For changes to existing courses see Course Change Template

Faculty: **Faculty of Business and IT**
This new course is associated with: ☐ Minor Program Adjustment ☐ Major Program Modification ☒ New Program ☐ None

Will this course appear anywhere other than the course description section of the Calendar?	☒ **Yes** ☐ **No**

If you answered yes to the above, please complete:

A new core course for an existing program, specialization or minor*: Minor Program Adjustment*

A new elective course for an existing program, specialization or minor, listed in the program map*: Course Sequencing or Course Placement*

A new course (core or elective) related to a Major Program Modification*: Major Program Modification*

Note: If the new course is for a new program, you do not need to show course placement as it will be captured in the new program proposal.

Programs impacted: [Please list all impacted programs including any applicable fields or specializations.]

Master of Financial Data Analytics

Calendar start date: (When the course should first appear in the Academic Calendar 2020-2021)

Fall 2022

Registration start date: (The first time the course will be open for registration e.g. Fall 2020)

Fall 2022

Additional supporting information (optional; please indicate if you are attaching any additional documentation)

Subject Code: MFDA	**Course Number:** 5600
Full Course Title: **Applied Financial Data Analytics Project**	
Short-Form Course Title (max. 30 characters)**:** **Applied Financial Data Analytics Project**	

Course Description

This course integrates the theory and skills learned in the MFDA program through an applied financial data analytics project where students work individually or in small teams to use data and applied techniques to analyze finance-related problems.

Students deliver on milestones to steadily progress towards a solution culminating with a project and presentation at the end of the class which demonstrates an application of skills and knowledge from the various domains in the program.

Credit Hours:	
Contact Hours – please indicate total number of hours for each component	
Lecture:6.0	**Lab:**
Tutorial: 3.0	**Other:**
Cross-listings	
Prerequisites for Calendar	**Completion of two semesters**
Prerequisites for Banner	
Co-requisites	
Prerequisites with concurrency (pre or co-requisite)	
Credit restrictions	☐ **Equivalency***
Recommended Prerequisites	
Course Restrictions	
Course Type	☐ **Core** ☐ **Elective** ☒ **Core or Elective**
Is the course: ☐ Undergraduate	☒ Graduate ☐ Professional (e.g. some Education courses)
Grading scheme	☐ **N (normal alpha grade)** ☒ **P (pass/fail)**

***Equivalency:** If it is equivalent, students can retake either course. If it is not equivalent, students are not allowed to register in the restricted course.

Course instructional method:

CLS (In Class Delivery)	X	HYB (In Class and Online Delivery)	X
IND (Individual Studies)		OFF (Off Site)	
WB1 (Virtual Meet Time – Synchronous)	X	WEB (Fully Online – Asynchronous)	X
Not Applicable			

Teaching and assessment methods:

This course is the integrated application of the knowledge gained throughout the MFDA program. Students will complete a financial data Analytics project using real data and applied techniques to analyze a finance-related problem. The class is conducted as a series of milestones and deliverables to culminate with the delivery of a presentation and project.

Learning outcomes: (for assistance developing course learning outcomes, please refer to the Teaching and Learning website, or contact them at teachingandlearning@uoit.ca.)

By the end of this course, students will be able to:
- Define a business problem
- Understand data models and sources
- Prepare data for model
- Perform business analytics methodologies
- Compare competing models
- Explain alternatives and tradeoffs
- Deliver impactful presentations

Does this course contain any experiential learning components? ☒ **Yes** ☐ **No**

If yes:

Case Study		Simulated Workplace Project	X
Consulting project/workplace project	X	Applied Research	X
Field Experiences			
Other Types of Experiences:			

We have consulted with all impacted areas: ☐ **Yes** ☐ **NA**

Process of consultation, if applicable:

Does this course contain any Indigenous content? ☐ **Yes** ☒ **No** ☐ **Unsure**

For more information on how Indigenous content is defined at Ontario Tech University and how to consult with the Indigenous Education Advisory Circle (IEAC), please refer to the Protocol for Consultation with the Indigenous Education Advisory Circle.

Has the IEAC been contacted? ☐ **Yes** ☐ **No**

If yes, when?

What was the advice you received from the IEAC, and how has it been included in your proposal?

Did the IEAC ask you to return the proposal to them for review? ☐ **Yes** ☐ **No**

If yes, have they completed their review? ☐ **Yes** ☐ **No** ☐ **N/A**

Financial Implications

FACULTY INTERNAL APPROVAL DATES

Faculty Council approval	
Curriculum Committee approval	
Internal Committee approvals	

NEW COURSE TEMPLATE

For changes to existing courses see Course Change Template

Faculty: **Faculty of Business and IT**
This new course is associated with: ☐ Minor Program Adjustment ☐ Major Program Modification ☒ New Program ☐ None

Will this course appear anywhere other than the course description section of the Calendar?	☒ **Yes** ☐ **No**

If you answered yes to the above, please complete:

A new core course for an existing program, specialization or minor*: Minor Program Adjustment*

A new elective course for an existing program, specialization or minor, listed in the program map*: Course Sequencing or Course Placement*

A new course (core or elective) related to a Major Program Modification*: Major Program Modification*

Note: If the new course is for a new program, you do not need to show course placement as it will be captured in the new program proposal.

Programs impacted: [Please list all impacted programs including any applicable fields or specializations.]

Master of Financial Data Analytics

Calendar start date: (When the course should first appear in the Academic Calendar 2020-2021)

Fall 2022

Registration start date: (The first time the course will be open for registration e.g. Fall 2020)

Fall 2022

Additional supporting information (optional; please indicate if you are attaching any additional documentation)

Subject Code: MFDA	**Course Number:MFDA5700** *ensure the course code has not been previously used
Full Course Title: Financial Data Analytics Internship	
Short-Form Course Title (max. 30 characters)**:** **Fin Data Analytics Internship**	

Course Description

The Financial Data Analytics Internship course is an important experiential learning component of the MFDA program, and its objective is to provide students with practical exposure to actual work environments in financial data analytics, which is essential for a more complete understanding of the application of computational skills to finance problems.

The Internship program permits MFDA students to be registered who have met the minimum requirements of the program. The result of the program and course are to further develop a student's skillset and experience in their field of study, and provide them with an opportunity to gain actual work experience in organizations they may consider for future careers post-graduation.

Credit Hours: 6	
Contact Hours – please indicate total number of hours for each component	
Lecture:	**Lab:**
Tutorial:	**Other:**
Cross-listings	
Prerequisites for Calendar	**Completion of two semesters**
Prerequisites for Banner	
Co-requisites	
Prerequisites with concurrency (pre or co-requisite)	
Credit restrictions	☐ **Equivalency***
Recommended Prerequisites	
Course Restrictions	
Course Type	☐ **Core** ☐ **Elective** ☒ **Core or Elective**
Is the course: ☐ Undergraduate	☒ Graduate ☐ Professional (e.g. some Education courses)
Grading scheme	☐ **N (normal alpha grade)** ☒ **P (pass/fail)**

***Equivalency:** If it is equivalent, students can retake either course. If it is not equivalent, students are not allowed to register in the restricted course.

Course instructional method:

CLS (In Class Delivery)		HYB (In Class and Online Delivery)	
IND (Individual Studies)		OFF (Off Site)	X
WB1 (Virtual Meet Time – Synchronous)		WEB (Fully Online – Asynchronous)	
Not Applicable			

Teaching and assessment methods:

The internship should be approved by the program director. Student interns are required to present a comprehensive report on their internship experience to the program director within six weeks of completing their internship employment. The internship report must be of high-quality and professionally presented in hard copy format, organization, style, spelling, grammar, and appearance (as well as in content). A professional report should include a cover page, table of contents, an executive summary (that will state the problem or problems that the student worked on, describe their activities and summarize their findings), and any relevant appendices. A formal citation style (APA or MLA) is also required for all sources of information presented.

Reports that do not demonstrate adequate professionalism will be returned for revision. The interns' direct work supervisor/manager will provide an assessment of the intern's performance on the job, which will be incorporated into the overall evaluation by the faculty FBIT internship coordinator. It is the student's responsibility to ensure the work supervisor submitted their completed evaluation to the Coordinator by the time they submit the Final Report.

Learning outcomes: (for assistance developing course learning outcomes, please refer to the Teaching and Learning website, or contact them at teachingandlearning@uoit.ca.)

By the end of this course, students will be able to:

- Gain practical experience within the analytics and AI industry;
- Acquire knowledge of the industry in which the internship contract is completed;
- Apply their academic knowledge learning in the classroom in a work setting;
- Develop a greater understanding about career options while more clearly defining personal career goals, interests, and industry connections.

Does this course contain any experiential learning components? ☒ **Yes** ☐ **No**

If yes:

Case Study		Simulated Workplace Project	
Consulting project/workplace project	X	Applied Research	
Field Experiences			
Other Types of Experiences:			

We have consulted with all impacted areas: ☐ **Yes** ☒ **NA**

Process of consultation, if applicable:

Does this course contain any Indigenous content? ☐ **Yes** ☒ **No** ☐ **Unsure**

For more information on how Indigenous content is defined at Ontario Tech University and how to consult with the Indigenous Education Advisory Circle (IEAC), please refer to the Protocol for Consultation with the Indigenous Education Advisory Circle.

Has the IEAC been contacted? ☐ **Yes** ☐ **No**

If yes, when?

What was the advice you received from the IEAC, and how has it been included in your proposal?

Did the IEAC ask you to return the proposal to them for review? ☐ **Yes** ☐ **No**

If yes, have they completed their review? ☐ **Yes** ☐ **No** ☐ **N/A**

Financial Implications

FACULTY INTERNAL APPROVAL DATES

Faculty Council approval	
Curriculum Committee approval	
Internal Committee approvals	

NEW COURSE TEMPLATE

For changes to existing courses see Course Change Template

Faculty: **FBIT**

This new course is associated with: ☐Minor Program Adjustment ☐ Major Program Modification ☒New Program ☐None

Will this course appear anywhere other than the course description section of the Calendar?	☒**Yes** ☐ **No**

If you answered yes to the above, please complete:

A new core course for an existing program, specialization or minor*: Minor Program Adjustment*

A new elective course for an existing program, specialization or minor, listed in the program map*: Course Sequencing or Course Placement*

A new course (core or elective) related to a Major Program Modification*: Major Program Modification*

Note: If the new course is for a new program, you do not need to show course placement as it will be captured in the new program proposal.

Programs impacted: [Please list all impacted programs including any applicable fields or specializations.]

Master of Business Analytics and AI

Calendar start date: (When the course should first appear in the Academic Calendar 2020-2021)

Fall 2021

Registration start date: (The first time the course will be open for registration e.g. Fall 2020)

Fall 2021

Additional supporting information (optional; please indicate if you are attaching any additional documentation)

See new program proposal

Subject Code: MBAI	**Course Number:** **5100G**
Full Course Title: Business Analytics	
Short-Form Course Title (max. 30 characters)**:**	

Course Description

This course will provide a coverage of concepts and tools used in different stages of a data analytics project, including problem definition, data collection and preparation, data analysis, and knowledge transfer. Statistical and other analytical tools such as data mining, machine learning, social network analytic, text mining, and their application to business will be explored.

In the current business world, data is a crucial valuable asset owned companies. It is vital for businesses to be able to effectively and efficiently define their problems, collect required data, examine the data, and communicate this information in an appropriate manner to decision makers. Given the massive amount of data available and constant technological advancements in the field of data analytics, it is crucial that students gain skills required to tackle these data-related problems. This course will provide hands-on training for learning these sought-after skills.

Credit Hours: 3.0		
Contact Hours – please indicate total number of hours for each component		
Lecture: 3.0	**Lab:**	
Tutorial: 3.0 (monthly)	**Other:**	
Cross-listings		
Prerequisites for Calendar	**None**	
Prerequisites for Banner		
Co-requisites		
Prerequisites with concurrency (pre or co-requisite)		
Credit restrictions	☐ Equivalency*	
Recommended Prerequisites		
Course Restrictions		
Course Type	☒Core ☐ Elective ☐Core or Elective	
Is the course: ☐Undergraduate ☒ Graduate ☐Professional (e.g. some Education courses)		
Grading scheme	☒N (normal alpha grade) ☐ P (pass/fail)	

***Equivalency:** If it is equivalent, students can retake either course. If it is not equivalent, students are not allowed to register in the restricted course.

Course instructional method:

CLS (In Class Delivery)		HYB (In Class and Online Delivery)	x
IND (Individual Studies)		OFF (Off Site)	
WB1 (Virtual Meet Time – Synchronous)	x	WEB (Fully Online – Asynchronous)	x
Not Applicable			

Teaching and assessment methods:

I believe this course can be delivered using both online and in-class methods but it has to be discussed in the meeting!

Learning outcomes: (for assistance developing course learning outcomes, please refer to the Teaching and Learning website, or contact them at teachingandlearning@uoit.ca.)

By the end of this course, students will be exposed to different stages of a data analytics project and will be expected to be able to conduct the following activities:

a) Pose interesting business questions that could be investigated by data.
b) Collect data, including data scraping from the web
c) Data preparation and data cleaning
d) Data summarizing that will be conducted using prescriptive statistics methods

After preparing data, students will learn how to use the data to answer the raised business questions in the following contexts:

e) Predictive analytics to provide estimates of the value of variables in the future
f) Recommender systems to predict customers' preferences
g) Social Media Analytics to extract information from the social media
h) Sentiment Analytics to extract information from a text
i) Spatial Data (GIS) analytics to extract information from "where things happen"

Does this course contain any experiential learning components? ☒Yes ☐ No

If yes:

Case Study		Simulated Workplace Project	
Consulting project/workplace project		Applied Research	
Field Experiences			
Other Types of Experiences:			

We have consulted with all impacted areas: ☐Yes ☒ NA

Process of consultation, if applicable:

Does this course contain any Indigenous content? ☐Yes ☒ No ☐Unsure

For more information on how Indigenous content is defined at Ontario Tech University and how to consult with the Indigenous Education Advisory Circle (IEAC), please refer to the Protocol for Consultation with the Indigenous Education Advisory Circle.

Has the IEAC been contacted? ☐Yes ☐ No

If yes, when?

What was the advice you received from the IEAC, and how has it been included in your proposal?

Did the IEAC ask you to return the proposal to them for review? ☐ Yes ☐No

If yes, have they completed their review? ☐ Yes☐ No ☐N/A

Financial Implications

See new program proposal.

FACULTY INTERNAL APPROVAL DATES

Faculty Council approval	
Curriculum Committee approval	
Internal Committee approvals	

NEW COURSE TEMPLATE

For changes to existing courses see Course Change Template

Faculty: **FBIT**

This new course is associated with: ☐Minor Program Adjustment ☐ Major Program Modification ☒New Program ☐None

Will this course appear anywhere other than the course description section of the Calendar?	☒**Yes** ☐ **No**

If you answered yes to the above, please complete:

A new core course for an existing program, specialization or minor*: Minor Program Adjustment*

A new elective course for an existing program, specialization or minor, listed in the program map*: Course Sequencing or Course Placement*

A new course (core or elective) related to a Major Program Modification*: Major Program Modification*

Note: If the new course is for a new program, you do not need to show course placement as it will be captured in the new program proposal.

Programs impacted: [Please list all impacted programs including any applicable fields or specializations.]

Master of Business Analytics and AI

Calendar start date: (When the course should first appear in the Academic Calendar 2020-2021)

Fall 2021

Registration start date: (The first time the course will be open for registration e.g. Fall 2020)

Fall 2021

Additional supporting information (optional; please indicate if you are attaching any additional documentation)

See new program proposal

Subject Code: MBAI	**Course Number:** **5300G**
Full Course Title: Programming and Data Processing	
Short-Form Course Title (max. 30 characters)**: Programming and Data Processing**	

Course Description

The first part of the course studies data processing using the following Python libraries: Pandas, Matplotlib, NumPy, SciPy, and others. Jupyter notebooks will be used for visualization. In the process, the course introduces Calculus and Statistics for machine learning. The second part of the course studies natural language processing techniques, network analysis, web log data analysis, and data integration techniques including data wrangling.

Credit Hours: 3.0		
Contact Hours – please indicate total number of hours for each component		
Lecture: 3.0		**Lab:**
Tutorial: 3.0 (monthly)		**Other:**
Cross-listings		
Prerequisites for Calendar		
Prerequisites for Banner		
Co-requisites		
Prerequisites with concurrency (pre or co-requisite)		
Credit restrictions		☐ Equivalency*
Recommended Prerequisites		
Course Restrictions		
Course Type	☒Core ☐ Elective ☐Core or Elective	
Is the course: ☐Undergraduate ☒ Graduate ☐Professional (e.g. some Education courses)		
Grading scheme	☒N (normal alpha grade) ☐ P (pass/fail)	

***Equivalency:** If it is equivalent, students can retake either course. If it is not equivalent, students are not allowed to register in the restricted course.

Course instructional method:

CLS (In Class Delivery)		HYB (In Class and Online Delivery)	x
IND (Individual Studies)		OFF (Off Site)	
WB1 (Virtual Meet Time – Synchronous)	x	WEB (Fully Online – Asynchronous)	x
Not Applicable			

Teaching and assessment methods:

Participation	**10**
Assignment 1	**15**
Assignment 2	**15**
Midterm I	**15**
Midterm II	**15**
Final Project	**30**

Learning outcomes: (for assistance developing course learning outcomes, please refer to the Teaching and Learning website, or contact them at teachingandlearning@uoit.ca.)

On the successful completion of the course, students will be able to:

1. Analyze data to understand its attributes.

2. Generate graphs that help understand properties of data that may not be so apparent otherwise.

3. Make an informed decision as to what learning algorithm is most appropriate for a given data set.

4. Create a machine learning model based on the data characteristics.

5. Use machine learning libraries to perform data analysis.

6. Generate graphs that help understand data and the performance of machine learning algorithms.

7. Analyze natural language problems to determine the type of problem at hand and the best possible way to address it.

8. Analyze and evaluate data from heterogeneous sources to apply the best integration techniques available.

Does this course contain any experiential learning components? ☐Yes X☐ No

If yes:

Case Study		Simulated Workplace Project	
Consulting project/workplace project		Applied Research	
Field Experiences			
Other Types of Experiences:			

We have consulted with all impacted areas: ☐Yes ☒ NA

Process of consultation, if applicable:

Does this course contain any Indigenous content? ☐Yes ☒ No ☐Unsure

For more information on how Indigenous content is defined at Ontario Tech University and how to consult with the Indigenous Education Advisory Circle (IEAC), please refer to the Protocol for Consultation with the Indigenous Education Advisory Circle.

Has the IEAC been contacted? ☐Yes ☐ No

If yes, when?

What was the advice you received from the IEAC, and how has it been included in your proposal?

Did the IEAC ask you to return the proposal to them for review? ☐ Yes ☐No

If yes, have they completed their review? ☐ Yes☐ No ☐N/A

Financial Implications

See new program proposal.

FACULTY INTERNAL APPROVAL DATES

Faculty Council approval	
Curriculum Committee approval	
Internal Committee approvals	

NEW COURSE TEMPLATE

For changes to existing courses see Course Change Template

Faculty: **FBIT**

This new course is associated with: ☐Minor Program Adjustment ☐ Major Program Modification ☒New Program ☐None

Will this course appear anywhere other than the course description section of the Calendar?	☒**Yes** ☐ **No**

If you answered yes to the above, please complete:

A new core course for an existing program, specialization or minor*: Minor Program Adjustment*

A new elective course for an existing program, specialization or minor, listed in the program map*: Course Sequencing or Course Placement*

A new course (core or elective) related to a Major Program Modification*: Major Program Modification*

Note: If the new course is for a new program, you do not need to show course placement as it will be captured in the new program proposal.

Programs impacted: [Please list all impacted programs including any applicable fields or specializations.]

Master of Business Analytics and AI

Calendar start date: (When the course should first appear in the Academic Calendar 2020-2021)

Fall 2021

Registration start date: (The first time the course will be open for registration e.g. Fall 2020)

Fall 2021

Additional supporting information (optional; please indicate if you are attaching any additional documentation)

See new program proposal

Subject Code: MBAI	**Course Number:** **5310G**
Full Course Title: Artificial Intelligence Programming	
Short-Form Course Title (max. 30 characters)**: AI Programming**	

Course Description

Students will learn to program a computer system to make predictions on, classify, or cluster data that the system has never seen before. Topics include theory and practice of supervised and unsupervised learning such as reinforcement learning, covering well-known algorithms such as linear regression, Naïve Bayes, support vector machines, ensemble methods, K-means, and convolutional and recurrent neural networks. The course uses the Python programming language with TensorFlow and Keras.

Credit Hours: 3.0		
Contact Hours – please indicate total number of hours for each component		
Lecture: 3.0	**Lab:**	
Tutorial: 3.0 (monthly)	**Other:**	
Cross-listings		
Prerequisites for Calendar	**MBAI 5300G**	
Prerequisites for Banner		
Co-requisites		
Prerequisites with concurrency (pre or co-requisite)	**Programming and Data Processing**	
Credit restrictions	☐ Equivalency*	
Recommended Prerequisites		
Course Restrictions		
Course Type	☒Core ☐ Elective ☐Core or Elective	
Is the course: ☐Undergraduate ☒ Graduate ☐Professional (e.g. some Education courses)		
Grading scheme	☒N (normal alpha grade) ☐ P (pass/fail)	

***Equivalency:** If it is equivalent, students can retake either course. If it is not equivalent, students are not allowed to register in the restricted course.

Course instructional method:

CLS (In Class Delivery)		HYB (In Class and Online Delivery)	x
IND (Individual Studies)		OFF (Off Site)	
WB1 (Virtual Meet Time – Synchronous)	x	WEB (Fully Online – Asynchronous)	x
Not Applicable			

Teaching and assessment methods:

Participation	**10**
Assignment 1	**15**
Assignment 2	**15**
Midterm I	**15**
Midterm II	**15**
Final Project	**30**

Learning outcomes: (for assistance developing course learning outcomes, please refer to the Teaching and Learning website, or contact them at teachingandlearning@uoit.ca.)

On the successful completion of the course, students will be able to:

1. Analyze data to understand its attributes.

2. Make an informed decision as to what learning algorithm is most appropriate for a given data set.

3. Create a machine learning model based on the data characteristics.

4. Use machine learning libraries to perform data analysis.

5. Generate graphs that help understand data and the performance of machine learning algorithms.

6. Obtain the foundations to develop a machine learning logic adequate for IT professionals.

Does this course contain any experiential learning components? ☐Yes x☐ No

If yes:

Case Study		Simulated Workplace Project	
Consulting project/workplace project		Applied Research	
Field Experiences			
Other Types of Experiences:			

We have consulted with all impacted areas: ☐Yes ☒ NA

Process of consultation, if applicable:

Does this course contain any Indigenous content? ☐Yes ☒ No ☐Unsure

For more information on how Indigenous content is defined at Ontario Tech University and how to consult with the Indigenous Education Advisory Circle (IEAC), please refer to the Protocol for Consultation with the Indigenous Education Advisory Circle.

Has the IEAC been contacted? ☐Yes ☐ No

If yes, when?

What was the advice you received from the IEAC, and how has it been included in your proposal?

Did the IEAC ask you to return the proposal to them for review? ☐ Yes ☐No

If yes, have they completed their review? ☐ Yes☐ No ☐N/A

Financial Implications

See new program proposal.

FACULTY INTERNAL APPROVAL DATES

Faculty Council approval	
Curriculum Committee approval	
Internal Committee approvals	

Faculty of Business and Information Technology

BUSI 5010G: Foundations of Business

Course outline for **WINTER 2021**

1. Course Details & Important Dates*

Term	Course Type	Day	Time	Location	CRN #
WINTER 2021	001 Lecture - Online	Thursday	11:10 am – 2 pm	Virtual	74916

Classes Start	Classes End	Last day to drop course without academic consequence	Final Exam Period
January 11, 2021	April 12, 2021	February 5, 2021	April 14 – 25, 2021

* For other important dates go to: https://ontariotechu.ca/current-students/academics/important-dates-and-deadlines.php

2. Instructor Contact Information

Instructor Name	Office	Phone	Email
Ashfakuddin Rubel	Virtual		Through Canvas, i.e. course website only
Office Hours: TBA			

3. Course Description

This course provides managers with an overview of the economic environment within which business must operate. Key concepts and ideas from microeconomics, macroeconomics and international economics are developed so that managers understand the economic forces that affect the operation of business entities and the impact of change in the economic environment on the strategic direction of the firm.

4. Learning Outcomes

On the successful completion of the course, students will be able to:

1) Understand fundamental microeconomics concepts, tools and theories required by a well-educated manager, working for a domestic or international organization in a globalized economy.
2) Understand basic macroeconomic factors affecting the operating environment of firms and organizations in a domestic and international context.
3) Understand the role of government, and their implications for managers and organizations.
4) Integrate current economic environment as they apply to business and across other disciplines.

5. Course Design

1) Lectures will cover the theoretical /practical aspect of the course (Use of Power Point slides and Notepad)
2) On the course website (Canvas), PowerPoint slides, Announcement and any Course related information will be uploaded for the students.
3) Students must attend lectures
4) After lecture students are expected to review the lectures at home so that it becomes easy while applying the concept in the assignment / discussions and real world scenario

The course is delivered through online class sessions and students must have stable internet connection for the online lectures. Note that this will require access to a specific set of technology tools; access to a laptop/tablet/PC with a built-in or external microphone and camera or web cam.

6. Outline of Topics in the Course

** Tentative Plan for the Semester

Lecture #	Date	Time	Topics	Chapter
Lecture 1	January 14th	11:10 am	Introduction; Where Prices Come From: The Interaction of Demand and Supply;	1,3
Lecture 2	January 21st	11:10 am	Market Efficiency and Market Failure; Consumer Choice and Elasticity Monitoring the value of Production: GDP	4,7
Lecture 3	January 28th	11:10 am	Technology, Production, and Costs; Firms in Perfectly Competitive Markets	8,9
Lecture 4	February 4th	11:10 am	Firms in Perfectly Competitive Markets; Monopoly and Antitrust Policy	9,10
Lecture 5	February 11th	11:10 am	Monopoly and Antitrust Policy; Monopolistic Competition and Oligopoly	10,11
Lecture	February 18th	Family Day and Winter Study Week		
Lecture 6	February 25th	11:10 am	Midterm February 25th	
Lecture 7	March 4th	11:10 am	G D P: Measuring Total Production and Income; Unemployment and Inflation	12 13
Lecture 8	March 11th	11:10 am	Unemployment and Inflation; Economic Growth, the Financial System, and Business Cycles	13,14
Lecture 9	March 18th	11:10 am	Aggregate Demand and Aggregate Supply Analysis	15
Lecture 10	March 25th	11:10 am	Monetary Policy; Fiscal Policy	17,18
Lecture 11	April 1st	11:10 am	Comparative Advantage, International Trade, and Exchange Rates	19
Lecture 12	April 8th	11:10 am	Review	

7. Required Texts/Readings

Essentials of Economics, 7/E (**Hubbard & O'Brien)**

Additional readings may be assigned or recommended during the course.

8. Evaluation Method

Tasks	Quantity	% Weight	Total %
Assignment 1	1	10	10
Assignment 2	1	10	10
Midterm test (in-class)	1	35	35
Final exam (to be scheduled)	1	35	35
Class participation*	1	10	10
			100%

Note: Midterm and Final exam will be administered through Canvas Lockdown Browser with Webcam. In order to write the exams students need a **Webcam**.

Final course grades may be adjusted to conform to program or Faculty grade distribution profiles. Further information on grading can be found in Section 5 of the Ontario Tech Academic Calendar.

Preparation. The amount of time you will need to allocate in preparation for class will depend on your prior background in economics. However, on average, you are expected to allocate no less than four hours per week. That includes the study of the assigned theory for the session, research for related news items, assessment of which one would be the most relevant for class discussion and, of course, the establishment of a clear link. Note that the textbook and power points slides provided by the Instructor is to be used primarily as a background resource. In your research for news items you should make use of quality online resources.

***Class Participation (contribution)*.** Naturally, your in-class contributions will take several forms including reporting on a news item (you should not expect that you will get a chance to contribute in every class), asking questions and/or making a comment on what others (including the instructor) have said. Your class participation mark will be assessed on the quality of your contributions on all of the above. The marks for class participation will be awarded as follows: Five for attendance and five for quality contributions.

9. Assignments and Tests

Assignment 1 and 2

Students will be evaluated on their ability to apply concepts and theories to business-related situations/problems, and their problem-solving skills. Students will have a week to work on the assignment. The assignment, along with a complete set of instructions, will be posted on Canvas one week prior to the set due date.

Due Dates:

Assignment#1 worth **10 %** before Midnight, February 7th, 2021
Assignment#2 worth **10 %** before Midnight, April 4th, 2021

Midterm Exam:

This is a closed-book test consisting of concepts and short scenario based questions designed to assess the students' depth and breadth of knowledge learned in class. Additional guidance and instructions will be given at least one week prior to due time.

Final Exam

The Final Examination will be based on materials covered after the midterm exam and will consist of concepts and short scenario based questions. Like the midterm test, the final exam is designed to assess the students' depth and breadth of knowledge learned in class. Additional guidance and instructions will be given at least one week prior to due time.

Missed Assignments

Coursework missed for medical or serious personal reasons must be documented and reported to the instructor within three (3) working days of the missed work using an Academic Consideration form. Coursework includes, but is not limited to, quizzes; written assignments; participation; case studies; etc… If missed coursework totals more than 25% of the final grade, this must be documented through the FBIT Academic Advising office. The weight of the missed course component will be reweighted to the final exam. If you miss coursework and do not notify the instructor within the three (3) working day deadline, you will receive a score of zero on the missed component.

Late Assignments: No late Assignments will be accepted.

Missed Term Test

Students who miss a midterm or term test may submit a request for deferral using an Academic Consideration form, along with supporting documentation to the Faculty Advising offices within three (3) working days. We do not require students to submit Ontario Tech University Medical Statements at this time. If a midterm or term test is missed for approved reasons, a make-up test will be offered at a date set by the course instructor. If you miss the midterm or term test and do not follow the procedure above, you will receive a score of zero on the missed component.

All forms can also be found in the Ontario Tech tab of MyCampus or on the Ontario Tech University website.

Any student who faces challenges securing their food or housing and believes this may affect their performance in the course is urged to contact studentlife@ontariotechu.ca for support. Furthermore, please notify your professor if you are comfortable in doing so. This will enable them to provide any resources and help that they can.

10. Technology Requirements

To support online learning, the university recommends certain technology requirements for laptops, software and internet connectivity which are available at: https://itsc.ontariotechu.ca/remote-learning.php.

Students experiencing technical difficulties such that they are unable to meet the technology requirements may contact the IT Service Help Desk at: servicedesk@dc-uoit.ca
Students experiencing financial difficulties such that they are unable to meet the technology requirements may contact Student Awards and Financial Aid Office at: connect@ontariotehu.ca

By remaining enrolled in this course, you acknowledge that you have read, understand and agree to observe the Recommended Technology Requirements for accessing university online learning resources, including those minimum requirements that are specific to your faculty and program.

11. Sensitive/Offensive Subject Matter

The classroom (both physical and virtual) is intended to provide a safe, open space for the critical and civil exchange of ideas and opinions. Some articles, media and other course materials may contain sensitive content that is offensive and/or disturbing. For example, some articles or videos may contain examples that are applicable to the course subject matter – [e.g. graphical depictions of violence, profanity, human anatomy, sexual acts, matters pertaining to race, gender, or sexuality]. The Course Instructor will try to identify such material and communicate warnings to students in advance of the distribution and use of such materials, affording students the choice to either emotionally prepare for, or not to view or interact with, the content.

12. Student Support

Any student who faces challenges securing their food or housing and believes this may affect their performance in the course is urged to contact studentlife@ontariotechu.ca for support. Furthermore, please notify your professor if you are comfortable in doing so. This will enable them to provide any resources and help that they can.

13. Sexual Violence Support and Education

Ontario Tech is committed to the prevention of sexual violence in all is forms. For any student who has experienced Sexual Violence, Ontario Tech can help. We will make accommodations to cater to the diverse backgrounds, cultures, and identities of students when dealing with individual cases.

If you think you have been subjected to or witnessed sexual violence:

- Reach out to a Support Worker, a specially trained individual authorized to receive confidential disclosures about incidents of sexual violence. Support Workers can offer help and resolution options which can include safety plans, accommodations, mental health support, and more. To make an appointment with a Support Worker, call 905.721.3392 or email studentlife@ontariotechu.ca
- Learn more about your options at: https://studentlife.ontariotechu.ca/sexualviolence/

14. Students with Disabilities

Accommodating students with disabilities at Ontario Tech is a responsibility shared among various partners: the students themselves, SAS staff and faculty members. To ensure that disability-related

concerns are properly addressed during this course, students with documented disabilities and who may require assistance to participate in this class are encouraged to speak with me as soon as possible. **Students who suspect they have a disability that may affect their participation in this course are advised to go to Student Accessibility Services (SAS) as soon as possible.** Maintaining communication and working collaboratively with SAS and faculty members will ensure you have the greatest chance of academic success.

When on campus access is allowed, students taking courses on north Oshawa campus can visit Student Accessibility Services in the Student Life Building, U5, East HUB (located in the Founders North parking lot). Students taking courses on the **downtown Oshawa campus** can visit Student Accessibility Services in the 61 Charles St. Building, 2nd Floor, Room DTA 225 in the Student Life Suite.

Disability-related and accommodation support is available for students with mental health, physical, mobility, sensory, medical, cognitive, or learning challenges. Office hours are 8:30am-4:30pm, Monday to Friday, closed Wednesday's 8:30am – 10:00am. For more information on services provided, you can visit the SAS website at https://studentlife.ontariotechu.ca/services/accessibility/index.php. Students may contact Student Accessibility Services by calling 905-721-3266, or email studentaccessibility@ontariotechu.ca.

When on campus access is allowed, students who require the use of the Test Centre to write tests, midterms, or quizzes MUST register online using the SAS test/exam sign-up module, found here https://disabilityservices.ontariotechu.ca/uoitclockwork/custom/misc/home.aspx. Students must sign up for tests, midterms, or quizzes AT LEAST seven (7) days before the date of the test.

Students must register for final exams by the registration deadline, which is typically two (2) weeks prior to the start of the final examination period. SAS will notify students of the registration deadline date.

15. Professional Conduct (if applicable)

Ontario Tech University is a community that values and promotes respect, integrity, diversity and accountability among all members of the university. These values can only be achieved in an environment that supports and protects the safety and security of its members. The Ontario Tech University Policy on Student Conduct defines and guides standards of student behaviour at the university to uphold these values and ensure that behaviour contrary to these standards are dealt with in a manner that is fair, open and effective.

Additional information on professional suitability can be found at http://calendar.uoit.ca/content.php?catoid=22&navoid=879#Academic_conduct

16. Academic Integrity

Students and faculty at Ontario Tech University share an important responsibility to maintain the integrity of the teaching and learning relationship. This relationship is characterized by honesty, fairness and mutual respect for the aim and principles of the pursuit of education. Academic misconduct impedes the activities of the university community and is punishable by appropriate disciplinary action.

Students are expected to be familiar with and abide by Ontario Tech University's regulations on Academic Conduct which sets out the kinds of actions that constitute academic misconduct, including plagiarism, copying or allowing one's own work to copied, use of unauthorized aids in

examinations and tests, submitting work prepared in collaboration with another student when such collaboration has not been authorized, among other academic offences. The regulations also describe the procedures for dealing with allegations, and the sanctions for any finding of academic misconduct, which can range from a resubmission of work to a failing grade to permanent expulsion from the university. A lack of familiarity with these regulations on academic conduct does not constitute a defense against its application. This information can be found at http://calendar.uoit.ca/content.php?catoid=22&navoid=879#Academic_conduct

Extra support services are available to all Ontario Tech University students in academic development, study skills, counseling, and peer mentorship. More information on student support services can be found at https://studentlife.ontariotechu.ca/services/academic-support/index.php

17. Turnitin (if applicable)

Ontario Tech University and faculty members reserve the right to use electronic means to detect and help prevent plagiarism. Students agree that by taking this course all assignments are subject to submission for textual similarity review by Turnitin.com. Assignments submitted to Turnitin.com will be included as source documents in Turnitin.com's restricted access database solely for the purpose of detecting plagiarism in such documents. The instructor may require students to submit their assignments electronically to Turnitin.com or the instructor may submit questionable text on behalf of a student. The terms that apply to Ontario Tech University's use of the Turnitin.com service are described on the Turnitin.com website.

Students who do not wish to have their work submitted to Turnitin.com must provide with their assignment at the time of submission to the instructor a signed Turnitin.com Assignment Cover sheet:
https://shared.uoit.ca/shared/department/academic-integrity/Forms/assignment-cover-sheet.pdf

18. Final Examinations (if applicable)

Final examinations are held during the final examination period at the end of the semester and **when on campus access is allowed,** may take place in a different room and on a different day from the regularly scheduled class. Check the published Examination Schedule for a complete list of days and times.

Students are required to show their Student ID card (campus ID) when **in-person examinations are allowed.** Students are advised to obtain their Student ID Card well in advance of the examination period as they will not be able to write their examinations without it. More information on ID cards can be found at https://registrar.ontariotechu.ca/campus-id/index.php.

Students who are unable to write a final examination when scheduled due to religious publications may make arrangements to write a deferred examination. These students are required to submit a Request for Accommodation for Religious Obligations to the Faculty concerned as soon as possible and no later than three weeks prior to the first day of the final examination period.

Further information on final examinations can be found at https://usgc.ontariotechu.ca/policy/policy-library/policies/academic/procedures-for-final-examination-administration.php

19. Freedom of Information and Protection of Privacy Act

The following is an important notice regarding the process for submitting course assignments, quizzes, and other evaluative material in your courses in the Faculty of Business and IT.

Ontario Tech University is governed by the Freedom of Information and Protection of Privacy Act ("FIPPA"). In addition to providing a mechanism for requesting records held by the university, this legislation also requires that the University not disclose the personal information of its students without their consent.

FIPPA's definition of "personal information" includes, among other things, documents that contain both your name and your Banner (student) ID. For example, this could include graded test papers or assignments. To ensure that your rights to privacy are protected, the Faculty of [Insert Faculty name] encourages you to use only your Banner ID on assignments or test papers being submitted for grading. This policy is intended to prevent the inadvertent disclosure of your information where graded papers are returned to groups of students at the same time. If you still wish to write both your name and your Banner ID on your tests and assignments, please be advised that Ontario Tech University will interpret this as an implied consent to the disclosure of your personal information in the normal course of returning graded materials to students.

If you have any questions or concerns relating to the new policy or the issue of implied consent addressed above, please contact accessandprivacy@ontariotechu.ca

Notice of Collection and Use of Personal Information
Throughout this course, personal information may be collected through the use of certain technologies under the authority of the *University of Ontario Institute of Technology Act, SO 2002, c. 8, Sch. O.* and will be collected, protected, used, disclosed and retained in compliance with Ontario's *Freedom of Information and Protection of Privacy Act R.S.O. 1990, c. F.31.*

This course may use the following technologies that may collect, use, disclose and retain personal information (including images) for the purposes described below; according to the instructor:

- Respondus Monitor and Proctortrack to maintain academic integrity for examinations;
- Google Meet and Kaltura Virtual Classroom to facilitate remote instruction and interactive learning;
- Peer-shared applications, services or technologies that may be reviewed, assessed, or used as part of coursework.
- Other applications, services, or technologies that support or enhance online learning that include, but are not limited to, others indicated by the instructor.

For more information relating to these technologies, we encourage you to visit: https://tlc.ontariotechu.ca/learning-technology/index.php Questions regarding personal information may be directed to: Ontario Tech University Access and Privacy Office, 2000 Simcoe Street North, Oshawa, ON L1G 0C5, email: accessandprivacy@ontariotechu.ca.

By remaining enrolled in this course, you acknowledge that you have read, understand, and agree to the terms and conditions under which the technology provider(s) may collect, use, disclose and retain your personal information. You agree to the university using the technologies and using your personal information for the purposes described in this course outline.

20. Freedom of Expression

Pursuant to Ontario Tech's Freedom of Expression Policy all students are encouraged to express ideas and perspectives freely and respectfully in university space and in the online university environment, subject to certain limitations. Students are reminded that the limits on Freedom of

Expression include speech or behaviour that: is illegal or interferes with the university's legal obligations; defames an individual or group; constitutes a threat, harassment or discrimination; is a breach of fiduciary, contractual, privacy or confidentiality obligations or commitments; and unduly disrupts and interferes with the functioning of the university. In the context of working online, different forms of communication are used. Where permitted, students using "chat" functions or other online forms of communication are encouraged to ensure that their communication complies with the Freedom of Expression Policy.

21. Student Course Feedback Surveys

Student evaluation of teaching is a highly valued and helpful mechanism for monitoring the quality of Ontario Tech University's programs and instructional effectiveness. To that end, course evaluations are administered by an external company in an online, anonymous process during the last few weeks of classes. Students are encouraged to participate actively in this process and will be notified of the dates. Notifications about course evaluations will be sent via e-mail, and posted on Canvas, Weekly News, and signage around the campus.

University Response to COVID-19

The government response to the COVID-19 pandemic is continually evolving. As new information becomes available from federal and provincial public health authorities, the Province of Ontario and the Regional Municipality of Durham, Ontario Tech University will remain nimble and prepared to respond to government orders, directives, guidelines and changes in legislation to ensure the health and safety of all members of its campus community. In accordance with public health recommendations, the university may need to adjust the delivery of course instruction and the availability and delivery mode of campus services and co-curricular opportunities. Ontario Tech University appreciates the understanding and flexibility of our students, faculty and staff as we continue to navigate the pandemic and work together to demonstrate our strong commitment to academic, research and service excellence during these challenging and unprecedented times.

The Accessibility for Ontarians with Disabilities Act (AODA) standards have been considered in the development of this model course template and it adheres to the principles outlined in the University's Accessibility Policy.

Faculty of Business and Information Technology

BUSI 5100 – Accounting Systems - 41769

Course outline for **FALL 2020**

1. Course Details & Important Dates*

Term	Course Type	Day	Time	Location	CRN #
FALL 2020	Online	Wednesday	2:10 – 5:00	CANVAS	41769

Classes Start	Classes End	Last day to drop course without academic consequence	Final Exam Period
September 8, 2020	December 7, 2020	October 5, 2020	December 9 – 20, 2020

* For other important dates go to: https://ontariotechu.ca/current-students/academics/important-dates-and-deadlines.php

2. Instructor Contact Information

Instructor Name	Office	Phone	Email
Morden Shapiro	online		Canvas message
Office Hours: by appointment			

Laboratory/Teaching Assistant Name	Office	Phone	Email
Office Hours:			

3. Course Description

This course provides an overview of financial and managerial accounting. The first part of the course develops students' ability to read, understand, and use corporate financial statements. The course focuses on the user of MBA financial accounting data (rather than the preparer). The second part of the course examines the concepts and tools of managerial accounting. The course covers alternative costing methods and illustrates how the resulting cost information can be used for decision-making and examines the role of the internal accounting system in evaluating managerial performance and in coordinating the activities within a firm.

4. Learning Outcomes

On the successful completion of the course, students will be able to decipher financial statements and other financial accounting reports. They will be able to distinguish between financial and managerial accounting and make use from a management perspective of each discipline.

5. Course Design

The course is delivered through online class sessions and students must have stable internet connection for the online lectures. Note that this will require access to a specific set of technology tools; access to a laptop/tablet/PC with a built-in or external microphone and camera or web cam.

This course will be delivered through weekly online sessions which will include a strong interactive component. Individual graded assignments and a substantial end of term project will enable students to demonstrate their learning.

6. Outline of Topics in the Course

See Course Schedule at the end of this document.

7. Required Texts/Readings

See Course Schedule at the end of this document.

Readings will be assigned or recommended during the course.

8. Evaluation Method

See Course Schedule at the end of this document.

Final course grades may be adjusted to conform to program or Faculty grade distribution profiles. Further information on grading can be found at:
http://calendar.uoit.ca/content.php?catoid=22&navoid=879#Grading

9. Assignments and Tests

There will be no final exam in this course.

See Course Schedule at the end of this document.

Missed Course Work

Coursework missed for medical or serious personal reasons must be documented and reported to the instructor within three (3) working days of the missed work using an Academic Consideration form. Coursework includes, but is not limited to, quizzes; written assignments; participation; case studies; etc… If missed coursework totals more than 25% of the final grade, this must be documented through the FBIT Academic Advising office. The weight of the missed course component will be reweighted to the end of term project. If you miss coursework and do not notify the instructor within the three (3) working day deadline, you will receive a score of zero on the missed component.

Any student who faces challenges securing their food or housing and believes this may affect their performance in the course is urged to contact studentlife@ontariotechu.ca for support. Furthermore, please notify your professor if you are comfortable in doing so. This will enable them to provide any resources and help that they can.

10. Student Support

Any student who faces challenges securing their food or housing and believes this may affect their performance in the course is urged to contact studentlife@ontariotechu.ca for support. Furthermore, please notify your professor if you are comfortable in doing so. This will enable them to provide any resources and help that they can.

11. Sexual Violence Support and Education

Ontario Tech is committed to the prevention of sexual violence in all is forms. For *any* student who has experienced Sexual Violence, Ontario Tech can help. We will make accommodations to cater to the diverse backgrounds, cultures, and identities of students when dealing with individual cases.

If you think you have been subjected to or witnessed sexual violence:

- Reach out to a Support Worker, a specially trained individual authorized to receive confidential disclosures about incidents of sexual violence. Support Workers can offer help and resolution options which can include safety plans, accommodations, mental health support, and more. To make an appointment with a Support Worker, call 905.721.3392 or email studentlife@ontariotechu.ca

Learn more about your options at: https://studentlife.ontariotechu.ca/sexualviolence/

12. Students with Disabilities

Accommodating students with disabilities at Ontario Tech is a responsibility shared among various partners: the students themselves, SAS staff and faculty members. To ensure that disability-related concerns are properly addressed during this course, students with documented disabilities and who may require assistance to participate in this class are encouraged to speak with me as soon as possible. **Students who suspect they have a disability that may affect their participation in this course are advised to connect with Student Accessibility Services (SAS) as soon as possible.** Maintaining communication and working collaboratively with SAS and faculty members will ensure you have the greatest chance of academic success.

Disability-related and accommodation support is available for students with mental health, physical, mobility, sensory, medical, cognitive, or learning challenges. Office hours are 8:30am-4:30pm, Mon-Fri. For more information on services provided, you can visit the SAS website at https://studentlife.ontariotechu.ca/services/accessibility/index.php

Students may contact Student Accessibility Services by calling 905-721-3266, or email studentaccessibility@ontariotechu.ca.

Students who require the use of the Test Centre to write tests, midterms, or quizzes MUST register online using the SAS test/exam sign-up module, found here

https://disabilityservices.ontariotechu.ca/uoitclockwork/custom/misc/home.aspx. Students must sign up for tests, midterms or quizzes AT LEAST seven (7) days before the date of the test.

Students must register for final exams by the registration deadline, which is typically two (2) weeks prior to the start of the final examination period. SAS will notify students of the registration deadline date.

Students taking courses at **north Oshawa campus location** can visit Student Accessibility Services in UL Building, Room 2 (located near the library). Students taking courses on the **downtown Oshawa campus** can visit Student Accessibility Services in the 61 Charles St. Building, 2nd Floor, Room DTA 225 in the Student Life Suite.

13. Professional Conduct (if applicable)

Ontario Tech University is a community that values and promotes respect, integrity, diversity and accountability among all members of the university. These values can only be achieved in an environment that supports and protects the safety and security of its members. The Ontario Tech University Policy on Student Conduct defines and guides standards of student behaviour at the university to uphold these values and ensure that behaviour contrary to these standards are dealt with in a manner that is fair, open and effective.

Additional information on professional suitability can be found at
http://calendar.uoit.ca/content.php?catoid=22&navoid=879#Academic_conduct

14. Academic Integrity

Students and faculty at Ontario Tech University share an important responsibility to maintain the integrity of the teaching and learning relationship. This relationship is characterized by honesty, fairness and mutual respect for the aim and principles of the pursuit of education. Academic misconduct impedes the activities of the university community and is punishable by appropriate disciplinary action.

Students are expected to be familiar with and abide by Ontario Tech University's regulations on Academic Conduct which sets out the kinds of actions that constitute academic misconduct, including plagiarism, copying or allowing one's own work to copied, use of unauthorized aids in examinations and tests, submitting work prepared in collaboration with another student when such collaboration has not been authorized, among other academic offences. The regulations also describe the procedures for dealing with allegations, and the sanctions for any finding of academic misconduct, which can range from a resubmission of work to a failing grade to permanent expulsion from the university. A lack of familiarity with these regulations on academic conduct does not constitute a defense against its application. This information can be found at
http://calendar.uoit.ca/content.php?catoid=22&navoid=879#Academic_conduct

Extra support services are available to all Ontario Tech University students in academic development, study skills, counseling, and peer mentorship. More information on student support services can be found at https://studentlife.ontariotechu.ca/services/academic-support/index.php

15. Turnitin (if applicable)

Ontario Tech University and faculty members reserve the right to use electronic means to detect and help prevent plagiarism. Students agree that by taking this course all assignments [and/or tests or exams] are subject to submission for textual similarity review by Turnitin.com. Assignments submitted to Turnitin.com will be included as source documents in Turnitin.com's restricted access database solely for the purpose of detecting plagiarism in such documents for five (5) academic years. The instructor may require students to submit their assignments electronically to Turnitin.com or the instructor may submit questionable text on behalf of a student. The terms that apply to Ontario Tech University's use of the Turnitin.com service are described on the Turnitin.com website.

Students who do not wish to have their work submitted to Turnitin.com must provide with their assignment at the time of submission to the instructor a signed Turnitin.com Assignment Cover sheet: https://shared.ontariotechu.ca/shared/department/academic-integrity/Forms/assignment-cover-sheet.pdf
Students whose assignments are submitted to Turnitin.com agree to abide by all the relevant Turnitin.com terms and conditions which may be found on the Turnitin.com website https://help.turnitin.com/Privacy_and_Security/Privacy_and_Security.htm#Privacy_Policy which is subject to change from time to time.

16. Final Examinations (if applicable)

There is no final examination in this course.

17. Freedom of Information and Protection of Privacy Act

The following is an important notice regarding the process for submitting course assignments, quizzes and other evaluative material in your courses in the Faculty of Business and IT.

As you may know, Ontario Tech University is governed by the *Freedom of Information and Protection of Privacy Act* ("FIPPA"). In addition to providing a mechanism for requesting records held by the university, this legislation also requires that the University not disclose the personal information of its students without their consent.

FIPPA's definition of "personal information" includes, among other things, documents that contain both your name and your Banner (student) ID. For example, this could include graded test papers or assignments. To ensure that your rights to privacy are protected, the Faculty of Business and IT encourages you to use only your Banner ID on assignments or test papers being submitted for grading. This policy is intended to prevent the inadvertent disclosure of your information where graded papers are returned to groups of students at the same time. If you still wish to write both your name and your Banner ID on your tests and assignments, please be advised that Ontario Tech University will interpret this as an implied consent to the disclosure of your personal information in the normal course of returning graded materials to students.

If you have any questions or concerns relating to the new policy or the issue of implied consent addressed above, please contact accessandprivacy@ontariotechu.ca

Course Schedule - BUSI 5100 – Accounting Systems – 4769 - Fall 2020
Wednesday online sessions 2:10-5:00
Morden Shapiro
Online office hours by appointment.

All correspondence should be via Canvas Messaging
THIS SCHEDULE CONSISTS OF 2 PAGES

Session #	DATES	Details	Assignments
1	Sept 9, 2020	Accounting the Language of Business	
2	Sept 16, 2020	Reading Financial information	
3	Sept 23, 2020	Exploring the "back end"	#1 Assignment available
4	Sept 30, 2020	Financial statement analysis, KPI's ratio analysis	
5	Oct 7, 2020	Introduction to internal and external players	#2 Assignment available
6	Oct 14, 2020	**STUDY BREAK – NO CLASSES**	
7	Oct 21, 2020	Introduction to Managerial accounting	
8	Oct 28, 2020	Disassembling the accounting model	#3 Assignment available
9	Nov 4, 2020	Organizational architecture	
10	Nov 11, 2020	Motivation and the managerial accountant	
11	Nov 18, 2020	Costing	End of term project available
12	Nov 25, 2020	KPI's	
13	Dec 2, 2020	Accounting and Management – A partnership	End of term project DUE

Course Readings

There is no text for this course. There will be assigned readings throughout the semester.

In class participation – various

There will be various in class participation events. These will take different forms and will not be announced beforehand. It will include quizzes, discussions and other forms of participation. This is not a simple attendance grade but is part of the learning process.
Individual in class participation events may have different point potential.
There will be NO ACCOMMODATION for missed in class participation events.

Grading

a.	In class participation	20%
b.	Individual assignments	40%
c.	End of term project	40%
		100%

18. Student Course Feedback Surveys

Student evaluation of teaching is a highly valued and helpful mechanism for monitoring the quality of Ontario Tech University's programs and instructional effectiveness. To that end, course evaluations are administered by an external company in an online, anonymous process during the last few weeks of classes. Students are encouraged to participate actively in this process and will be notified of the dates. Notifications about course evaluations will be sent via e-mail, and posted on Canvas, Weekly News, and signage around the campus.

Appendix C – Faculty Information

Faculty members by home unit, rank, and supervisory privileges

Name	Home Faculty/Unit	Rank / Discipline	Supervisory Privileges	Teaching in the new Program
Amirali Abari, BS, MSc, PhD	FBIT	Assistant Professor Computer Science	Graduate Faculty - Ontario Tech University - MSc/PhD Computer Science - MITS	MFDA 5600, MFDA 5700
Amir Akbari, BSc, MBA. PhD	FBIT	Assistant Professor, Finance		MFDA 5300, MFDA 5600, MFDA 5700
Nader Azad, BS, MSc, PhD	FBIT	Assistant Professor, Operations Research	Graduate Faculty - Ontario Tech University - MSc/PhD Modelling and Computational Science - MEngM – Engineering Management	MFDA 5600, MFDA 5700
Michael Bliemel, BSc, MMS, PhD	FBIT	Dean, Professor, Information Systems	Graduate Faculty - Ontario Tech University - MSc/PhD Computer Science - MITS Adjunct Faculty - Dalhousie University - Faculty of Graduate Studies/Rowe School of Business	MFDA 5600, MFDA5700
Bin Chang, BA, MA, PhD	FBIT	Associate Professor, Finance	Graduate Faculty - Ontario Tech University -Graduate diploma in accounting	MFDA 5500, MFDA 5600, MFDA 5700
Ana Duff, BSc, MSc, PhD	FBIT	Assistant Teaching Professor, Mathematics		MFDA 5600, MFDA5700
Patrick Hung, PhD, MPS, MASc, BSc	FBIT	Professor, Computer Science	Graduate Faculty – Ontario Tech University - MSc/PhD Computer Science - MITS Adjunct Graduate Faculty - Computer Science Program, University of São Paulo, Brazil - Computer Science Program, Federal University of Pernambuco, Brazil	MFDA 5600, MFDA 5700

			- Computer Engineering Program, National Taipei University of Technology, Taiwan	
Stephen Jackson, BSc, PhD	FBIT	Associate Professor, Information Systems	Graduate Faculty – Ontario Tech University - MSc/PhD Computer Science - MITS - Gdip Accounting	MBAI 5410, MFDA 5600, MFDA 5700
Chinmay Jain, BTech, PhD	FBIT	Associate Professor, Finance		MFDA 5100, MFDA 5600, MFDA 5700
Ying Jiang, BA, MPhil, PhD	FBIT	Associate Professor, Marketing		MFDA 5600, MFDA 5700
Amin Ibrahim, BASc, MASc, PhD	FBIT	Associate Teaching Professor, Mathematics		MBAI 5400, MFDA 5600, MFDA 5700
Karolina Krystyniak, BBA, MA, PhD, CFA	FBIT	Assistant Professor, Finance		MFDA 5100, MFDA 5200, MFDA 5400, MFDA 5600, MFDA 5700
Fletcher Lu, BMath, MMath, PhD	FBIT	Associate Professor, Mathematics	Graduate Faculty - Ontario Tech University - MSc/PhD Computer Science - MHSc/PhD Health Science - MSc/PhD Modelling and Computational Science	MBAI 5300, MFDA 5600, MFDA 5700
Stephen Marsh, BSc, PhD	FBIT	Associate Professor, Computer Science	Graduate Faculty - Ontario Tech University - MSc/PhD Computer Science - MITS	MBAI 5500, MFDA 5600, MFDA 5700
Samaneh Mazaheri, BSc, MSc, PhD	FBIT	Assistant Teaching Professor, Computer Science		MFDA 5600
Carolyn McGregor, BAppSc, AM, PhD	FBIT	Professor, Computer Science	Graduate Faculty - Ontario Tech University - MSc/PhD Computer Science - MHSc/PhD Health Science Associate Graduate Faculty – Ontario Tech University	MBAI 5110, MFDA 5600, MFDA 5700

			- MSc/PhD – Electrical and Computer Engineering Adjunct Graduate Faculty - University of Technology, Sydney, Australia - University of Southern Denmark - Jain University	
Theresa Miedema, BA, LL.B, SJD	FBIT	Associate Teaching Professor, Law		MBAI 5200, MFDA 5600
Amir Rastpour, BSc, MSc, PhD	FBIT	Assistant Professor, Operations Research	Graduate Faculty - Ontario Tech University - MSc/PhD Modelling and Computational Science - MEngM – Engineering Management	MBAI 5100, MFDA 5600, MFDA 5700
Karthik Sankaranarayanan, PhD, MSc, BSc	FBIT	Associate Professor, Operations Research	(CS and Modelling & Computational Science) and Graduate Faculty - Ontario Tech University - MSc/PhD Modelling and Computational Science - MSc/PhD Computer Science Graduate Faculty - Amrita University, India – PhD Sustainable Development).	MFDA 5600, MFDA 5700
Alexander Serenko, MBA, PhD	FBIT	Associate Professor, Information Systems	Graduate Faculty - Ontario Tech University - MSc/PhD Computer Science - MHSc/PhD Health Science Adjunct Graduate Faculty - University of Guelph - Macquarie University	MFDA 5600, MFDA 5700
Julie Thorpe, BCompSci, PhD	FBIT	Associate Professor, Computer Science	Graduate Faculty - Ontario Tech University - MSc/PhD Computer Science - MITS	MFDA 5600, MFDA 5700
Miguel Vargas Martin, BSc, MASc, PhD	FBIT	Professor, Computer Science	Graduate Faculty - Ontario Tech University - MSc/PhD Computer Science - MITS	MBAI 5310, MFDA 5600, MFDA 5700

			Associate Graduate Faculty – Ontario Tech University - MSc/PhD – Electrical and Computer Engineering - MHSc/PhD – Health Science Adjunct Graduate Faculty - University of Aguascalientes - Centro de Investigacion y de Estudios Avanzados del IPN - Instituto Technologico de Aguascalientes	
Wei-Lin Wang, BBA, MBA, PhD	FBIT	Assistant Professor, Marketing		MFDA 5600, MFDA 5700
Hui Zhu, BSc, MA, PhD	FBIT	Associate Professor, Finance		MFDA 5200, MFDA 5600, MFDA 5700

*Tenure, tenure track, teaching-focused, continuing sessional, special appointment, emeritus, etc.
**Note if faculty will be teaching and or supervising in the program, indicate primary supervisor by asterisks
***Bold indicates core course developer for New Program

Graduate supervisory records/experience by faculty member

Name	Completed			Current		
	Master's	Ph.D.	PDF	Master's	Ph.D.	PDF
Amirali Abari	0	0	0	5	2	0
Nader Azad	0	0	1	0	1	2
Michael Bliemel	4	2	0	0	0	0
Patrick Hung	6	1	0	13	3	0
Fletcher Lu	4	0	0	1	1	0
Stephen Marsh	3	1	0	0	2	0
Carolyn McGregor	3	2	2	8	2	0
Miguel V. Martin	38	6	1	4	1	0

Karthik Sankaranarayanan	3	1	0	2	5	0
Alexander Serenko	1	2	0	0	0	0
Julie Thorpe	19	1	0	2	1	0
Hui Zhu	5	2	0	1	0	0

Publication records at Ontario Tech by year and outlet (current and last 5 years)

Year	Faculty Members	Articles	Books	Book Chapters	Reports	Conference Presentations
2015	6	10	1		2	16
2016	7	3	1			13
2017	7	8	2			22
2018	10	22		3		31
2019	14	27		2		31
TOTAL	**14**	**70**	**4**	**5**	**2**	**113**

Publication records, regardless of affiliation, by year and outlet (current and last 5 years)

Year	Faculty Members	Articles	Books	Book Chapters	Reports	Conference Presentations
2015	12	16	1	0	3	51
2016	11	7	1	0	0	27
2017	10	16	2	2	0	32
2018	14	24	0	3	0	44
2019	18	52	1	1	3	61
TOTAL	**18**	**115**	**5**	**6**	**6**	**215**

Research funding at Ontario Tech by source and year

Year	Faculty Members	Canadian Granting Councils	Canadian Government	International Government	Others
2015	7	$48,500	$175,000		$21,996
2016	5	$219,500	$875,000		$776,833
2017	9	$218,446	$750,000		$800,922
2018	10	$360,682	$211,000	$249,000	$404,412
2019	10	$439,027	$68,501		$288,437
TOTAL	**10**	**$1,286,155**	**$2,079,501**	**$249,000**	**$2,292,600**

Research funding, regardless of affiliation, by source and year

Year	Faculty Members	Canadian Granting Councils	Canadian Government	International Government	Others
2015	9	$89,471	$190,000		$162,496
2016	7	$356,706	$975,000		$790,330
2017	9	$228,446	$876,000		$813,897
2018	10	$414,012	$211,000	$249,000	$427,312
2019	11	$492,356	$194,501		$288,437
Total	**12**	**$1,580,991**	**$2,446,501**	**$249,000**	**$2,481,972**

New Program Assessment: Master of Computational Finance*

Library Statement of Support Provided to Ontario Tech University

*Original Program Title

Prepared by: Fiona Munroe, Faculty of Business & IT Liaison Librarian, October 1, 2020

OntarioTech Library

Contents

Summary

Ontario Tech University Library's holdings in computer systems and computer programming are strong.

Library collections and services form a solid foundation of support for Ontario Tech's proposed new Master of Computational Finance program. Existing collection strengths in computer systems and computer programming will provide a baseline of support for courses in the program.

The Library's research and special collections total more than 102,000 print volumes and 100,000 journal subscriptions. The Library provides access to more than 865,000 ebooks, and primary source materials. Collection strengths support the research and instructional programs at Ontario Tech University.

Resource Requirements

This proposal is for a Master's degree in a subject area that is related to undergraduate programs in Commerce and Computer Science at Ontario Tech. The acquisition of additional resources that relate to the intersection of these disciplines will be necessary to support a Masters level program. Based on current knowledge of the program, we estimate additional funding is required to build collections as outlined below.

Resource	Rationale	Budget Requirement	OTO or Ongoing
Library Collections	New acquisitions including select textbooks and masters-level resources to address subject gaps in Computational Finance	$2500	One time, start up
Total		$2500	

Introduction

The Library supports the teaching, learning and research missions of Ontario Tech University and Durham College. Ontario Tech students have access to a joint collection of more than 102,000 print books purchased by both Ontario Tech and Durham College. Additionally, the Library provides access to online resources including ebooks and online databases that are selected to meet the teaching and research needs of Ontario Tech programs. Students and faculty are served by a team of subject specialist librarians and trained library technicians who provide an array of research and teaching support services including information literacy instruction, workshops, research help and reference service.

Library Collections

The following section provides an overview of existing print and online resources available to support the Master of Computational Finance (MCF) program. A good Library resource base exists for the MCF program, as there are curriculum connections between MCF and a number of programs at Ontario Tech. These include Mathematics, Computer Science (with optional specialization in Data Science), and Commerce. However, more advanced and comprehensive resources are required to support this new Masters level program. Additional staff time will be required to develop resource guides, evaluate and manage collections to support curriculum and provide research support for students and faculty in the MCF program.

The Library's collections expenditures for the 2019-20 fiscal year totaled $ 1,664,480. Approximately 90% of this budget is allocated for the purchase of subscription online resources. The remainder of the budget is allocated for the acquisition of print and online resources to support the curriculum including journals, books and ebooks, multimedia and other specialized material.

The Library welcomes suggestions from members of the University community. Faculty and students may suggest material for purchase using an online form. All recommended purchases are evaluated according to the Collection Development Policy and with consideration to budget constraints.

Consortial Licensing

By virtue of our membership in two key consortia, Ontario Tech University Library is able to take advantage of the increased bargaining power of a collective through which we subscribe to a wide array of scholarly content. Canada Research Knowledge Network (CRKN) is a partnership of Canadian universities, dedicated to expanding digital content for the academic research and teaching enterprise in Canada. Through the coordinated leadership of librarians, researchers, administrators and other stakeholders in the research community, CRKN undertakes large-scale content acquisition and licensing initiatives in order to build knowledge infrastructure, research, and teaching capacity in Canada's universities.

The Ontario Council of University Libraries (OCUL) leads and participates in a number of initiatives with the goal of enhancing research supports and creating rich learning environments for Ontario's diverse and growing student population. These resources span an impressive array of information resources (content), digital infrastructure, data, and maps and geospatial resources.

Journals

The Library almost exclusively acquires online journals and provides access to more than 100,000 titles across all disciplines. The Library's collection of academic journals in disciplines related to the Master of Computational Finance is strong.

Students and researchers can access nearly complete journal suites, in many cases including archives, from publishers such as:

- SpringerLink – Computer Science
- Wiley-Blackwell – Business, Economics, Finance, & Accounting
- Elsevier – Economics, Econometrics, & Finance
- Elsevier - Mathematics

Library holdings by subject category:

Subject Category	# of Journal Holdings
Computer Science	1037
Finance	1210
Mathematics - General	298
Mathematical Statistics	115
Technology – General	410

The Library provides access, through subscription, to most of the relevant journals with the highest impact factors, according to Clarivate's Journal Citation Reports (JCR) database (2019).

JCR Subject Area	Holdings in Top 20	Key Titles
Business, Finance	20/20	Journal of Finance Journal of Finance and Quantitative Analysis Journal of Computational Finance Financial Innovation
Statistics & Probability	19/20	R Journal Econometrica Statistics & Computing Journal of Business & Economic Statistics

JCR Subject Area	Holdings in Top 20	Key Titles
Computer Science – Artificial Intelligence	18/20	IEEE transactions on pattern analysis and machine intelligence Information Fusion IEEE Computational Intelligence Magazine Artificial Intelligence Review

Books & Ebooks

The Library at Ontario Tech University provides access to 102,131 print books and 840,921 ebooks that support teaching, learning and research across all programs and disciplines. Students and faculty have access to collections of books and ebooks from major academic publishers.

The following table highlights print holdings in relevant subjects. Collection strengths are evident in computer science and statistics. Gaps identified in the Library's holdings in the following subjects will be areas of focus for collection development:

- Finance – Mathematical Models
- Financial Engineering
- Artificial Intelligence

Subject	# Print Books
Finance – Mathematical Models	37
Financial Engineering	12
Artificial Intelligence	47
Computer Science	866
Statistics	1321

Ontario Tech users have access to 865,736 ebooks from a variety of academic publishers. The following collections have particular relevance to the MCF program, with subject coverage that includes:

Collection	# Titles
Scholar's Portal – Computer Science	17, 461
Scholar's Portal – Quantitative Finance	340

Springer Link – Finance	733
Springer Link - Mathematics	7, 909
Sage Knowledge - Finance	379

Search Tools

The Library subscribes to 737 research databases and indexes, many of which provide access to the literature in the fields of finance, computer science, and mathematics. Systematic searching of these resources enables students and faculty to access journals and other academic resources such as conference proceedings, theses and dissertations, trade publications and reports. In 2019-20, Ontario Tech students engaged in 91,338 electronic resource searches and accessed 179,080 full-text articles. The databases below are particularly relevant to the MCF program.

Highly Relevant Databases:	Relevant Databases: Multidisciplinary
• Computers & Applied Sciences Complete • MathSciNet • IEEE • Business Source Complete • ABI/INFORM	• Scopus • Web of Science

Following consultations with the Dean, the Library anticipates that students in the MCF program will predominantly be using electronic resources licensed directly by the Faculty through the FBIT Finance Laboratory. Therefore additional subscription resources licensed through the Library are not necessary to support this new program.

Other Library Resources

Data Resources

To support research that requires statistics and datasets, the Library subscribes to three main resources:

- **Data Liberation Initiative (DLI):** Access to datasets from Statistics Canada surveys including public use microdata files (PUMF) and research data centre (RDC) master files.
- **Odesi**: A web-based data exploration, extraction and analysis tool that enables researchers to search for variables across thousands of datasets including Statistics Canada datasets and polling data.
- **Interuniversity Consortium for Political and Social Research (ICPSR)**: Access to a data archive of more than 250,000 files of research in the social and behavioral sciences. Includes specialized collections of data in education, aging, criminal justice, substance abuse, terrorism, and other fields. Resources for teaching and learning include classroom exercises and materials to support data literacy in the classroom.

The Library also provides access to Dataverse, a repository that supports research data management and open access data requirements for Tri-Agency research funding compliance.

Multimedia Resources

The Library acquires DVD and streaming video resources that are relevant to the disciplines in the MCF program. Multimedia resources are selected individually or as part of standing subscriptions.

The Library's collection includes 109,200 Streaming Video titles. Of these multimedia resources, the following are particularly relevant to the curriculum in the MCF program.

Relevant Streaming Video Collections

Streaming Video Collection	Relevant Titles
Kanopy Streaming	Mathematics (310 titles), Computer Science and Technology (310 titles), Business (1,115)

Library Services

A range of library services support teaching, learning and research at the University. Students and faculty in the MCF program will have access to services in-person, online and via email or telephone.

Research Support

The Library plays a vital role in supporting student and faculty research at Ontario Tech.

Reference Service & Research Consultations

Students and faculty have access to research support in-person, via telephone, email and online chat help. In the 2019-20 academic year, library staff answered 14,630 research questions from the Ontario Tech community. Of these questions, 484 were from faculty or graduate students.

Librarians are available for individualized research consultations with students and faculty. These consultations are tailored to meet the needs of individual researchers and can cover a range of topics from basic introductions to more advanced search techniques and support for literature reviews.

Open Access & Research Data Management

The Library provides support to faculty and students in complying with the Tri-Agency Open Access Policy (SSHRC, NSERC, CIHR). Faculty and students can make their work open by publishing in an open access or hybrid journal, by depositing their work in a subject repository, or by depositing their work in Ontario Tech's institutional repository, e-scholar@UOIT (https://ir.library.dc-uoit.ca).

The Library provides direct support to Faculties through dedicated subject specialist/liaison librarians and online guidance with the Library's Open Access Guide (http://guides.library.uoit.ca/openaccess). The Library has a Research Data Management guide (http://guides.library.uoit.ca/rdm) to support faculty and students in creating data management plans and sharing research data.

During the 2019-20 academic year, these guides were viewed 968 times.

Research Metrics & Impact

The Library supports various departments on campus by fielding requests for reports on author, article, journal and institutional metrics. Subscribed tools include: Web of Science, Scopus, Journal Citation Reports (JCR) and InCites.

The Library's Research Metrics guide (http://guides.library.uoit.ca/researchmetrics) provides background information and support for these tools.

Theses & Dissertations

The Library ensures that the Ontario Tech community has access to national and international thesis and dissertation databases. Access to PQDT (ProQuest Dissertations and Theses) and the Theses Canada Portal is provided through the Library website. The Library plays a key role in the dissemination and preservation of Ontario Tech theses, managing copies in the institutional open-access digital repository, e-scholar@UOIT, as well as maintaining print copies in the Library archives.

Teaching & Learning Support

As partners in teaching and learning at Ontario Tech, the Library provides a range of instructional and curriculum supports, both in person and online.

Information Literacy Instruction

In collaboration with teaching faculty, Librarians deliver customized information literacy classes that support the development of students' 21st century skills to successfully search, evaluate and ethically use scholarly resources in their course requirements. These library services are aligned with the Association of College and Research Libraries (ACRL) Framework for Information Literacy for Higher Education. Information literacy sessions are tailored to the specific requirements of the course or assignment. In 2019-20, Librarians delivered 91 instructional sessions to over 2,700 Ontario Tech students.

Ideally, Information Literacy instruction is scaffolded across the required curriculum, enabling students to build increasingly sophisticated research skills throughout their program of study. The following courses have been identified as potential Information Literacy touchpoints, due to the research skills outcomes built into the curriculum:

- Financial Management
- Capstone Course

Co-curricular Workshops

In addition to Information Literacy instruction that is integrated into the curriculum, the library offers a number of co-curricular workshops that help develop student and faculty skills. Some examples of workshops offered to Ontario Tech students in the past include:

- 3D Printing
- Managing Your Research Identity
- Citation Management
- Finding and Using Open Educational Resources

Workshop offerings are regularly updated in response to the changing needs of the community.

Online Research Guides

Subject specialist librarians create and maintain Research Guides, which provide an easy entry point for students to access resources relevant to specific programs, courses, and assignments. These resources include databases, journals and trade publications, codes, standards, and books. Research Guides

include program and course guides that are directly related to the program and course curriculum, as well as topic guides that have cross-disciplinary relevance. Librarian-prepared quick citation guides are available to students and faculty for APA, MLA and other styles. Resources to assist students with issues of plagiarism and academic integrity are available through our Library's Citation guide.

The number of views for selected guides in the 2019-20 academic year is provided below:

Research Guide	Guide Views
Business	875
Citation	6260
Computer Science	194
Data	412

Copyright & Academic Integrity

The Library provides copyright advice for faculty and students. Library staff advise on license terms and the integration of content into the Learning Management System (LMS). The Library also helps faculty find, evaluate and integrate Open Educational Resources into their courses.

The Library's research support services including our citation guides help students avoid plagiarism and comply with the University's Academic Conduct policy.

Course Reserves

Instructors can place material that is in high demand on course reserve in the library. Reserve material is available to students on shorter loan periods, ensuring equitable access to required textbooks and readings.

In addition to print material, instructors may also place material from the library's online holdings on electronic reserve. Electronic reserves are subject to copyright compliance and licensing restrictions. The Library provides access to reserve material via the Library's catalogue, and also through Leganto Course Readings, a tool that integrates with the Canvas LMS.

3D Printing & Equipment Loans

Students have access to 3D printers and 3D printing workshops and can borrow equipment such as laptops and device chargers.

Library Staffing

The anticipated intake for students in the MCF program for years 1-5 is as follows:

Level of Study	Master's year 1
Academic Year 2022 – 2023	15
Academic Year 2023 – 2024	20
Academic Year 2024 – 2025	25
Academic Year 2025 – 2026	30
Academic Year 2026 – 2027	35
Academic Year 2027 – 2028	40

The library does not anticipate that additional staffing will be required in association with this new degree program. Any additional staffing requirements will be addressed as part of the regular budget planning process, based on a more fulsome and strategic analysis of Library staffing needs.

About the Library

Library Services

The Library supports the teaching, learning and research mission of the University. Students and faculty have access to a range of services provided by subject specialist librarians and trained library technicians.

Library Statistics: 2019-20

Collections

Print Books	102,131
Ebooks	865,736
Online Journals	100,754
Streamed Media	109,200
Online Databases	737

Financials

Collections	$1,664,480
Salaries & Benefits	$2,035,036
Other Expenses	$135,845
Total	$3,835,361

Library Usage

Library visits*	400,420
Questions answered	14,630
Items borrowed*	21,108
Classes & Workshops	99
Study room bookings*	8,080

Online Resource Use

Website page views	218,607
Research Guide views	133,479
E-Resource searches	91,338
Full text articles accessed	179,080

*Impacted by COVID 19 Closure

Reference & Research Support

Students and faculty have access to research support in person, via telephone, email and online via our chat help service, Ask A Librarian.

Librarians support researchers across all stages of the scholarly communication cycle. Librarians have expertise in literature searches, data management, publishing, research dissemination, preservation, research metrics and impact evaluation.

Information Literacy Instruction

In collaboration with teaching faculty, Librarians deliver customized information literacy classes that support the development of students' 21st century skills to successfully search, evaluate and ethically use scholarly resources in their course requirements. These classes are aligned with the Association of College and Research Libraries (ACRL) Framework for Information Literacy for Higher Education and are tailored to the specific requirements of the course or assignment.

Online Research Guides

Subject specialist Librarians create custom Research Guides (guides.uoit.ca) for each subject area that is available from the Library website. These guides include program and course guides directly related to curriculum, and topic guides that have cross-disciplinary relevance.

Library Website

The Library's website (ontariotechu.ca/library) is a portal to our services, search tools and collections in all formats. Students and faculty have access to thousands of print and online resources through the Quick Search interface on our homepage, as well as specialized subject databases, datasets and search tools.

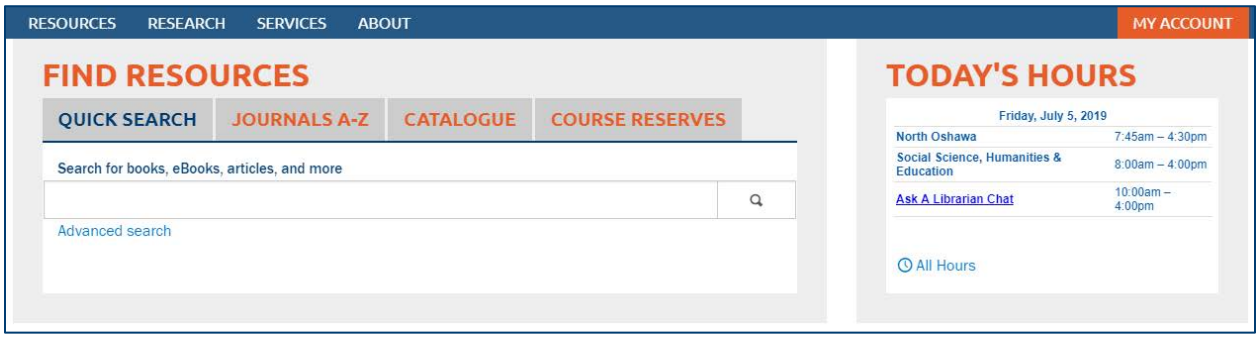

Figure 1 Ontario Tech Library Homepage

Library Resources

Our subject specialist librarians select and acquire scholarly resources to support the curricular and research needs of the University. By virtue of our membership in two key consortia, Canada Research Knowledge Network and the Ontario Council of University Libraries, Ontario Tech University Library is able to take advantage of the increased bargaining power of a collective through which we subscribe to a wide array of scholarly content.

Approximately 90% of the Library's collections budget is directed to subscription online resources, with the remainder for the acquisition of other formats to support the curriculum including books and e-books, multimedia and other specialized material.

Library Spaces

The Ontario Tech University Library has two campus locations:

North Oshawa Library: 2000 Simcoe St. North	Social Science, Humanities & Education Library: 61 Charles St.
77,500 square feet	7,517 square feet
560 seats	129 seats
92 computer workstations	7 computer workstations
195 accessible Ethernet ports	13 accessible Ethernet ports
10 bookable group study rooms	1 bookable group study room
Digital recording booth	Ellison die cut machine for student use
Adaptive technology area	Curriculum kits & manipulatives
Photocopiers, printers (including colour & 3D printer), scanners	Photocopiers, printers (including 3D printer), scanners
IT Services software support personnel	IT Services software support personnel
Silent study zones, 3rd & 4th floor	Silent study room
Fireside Reading Room, 2nd floor	Lois Sleightholm Education Collection
Library Den collaborative study area, lower level	Curriculum documents and Children's Literature collection area
Archives & Special collections facilities	
Student day use lockers	

Global Association of Risk Professionals
111 Town Square Place, 14th Floor • Jersey City, New Jersey • 07310 USA

Ontario Tech University
2000 Simcoe Street N
Oshawa, ON L1G OC5
Canada

Attn: Michael Bliemel, PhD
Dean & Professor of Information Systems
Faculty of Business and Information Technology

Dear Dr. Bliemel,

I am writing today in support of the Master of Computational Finance* your institution is planning to launch in Fall 2022. My understanding of the planned content indicates that students who complete such a program will have a strong background not only in finance, but also in the areas of technology, AI etc. that your institution is so well known for. These skills will serve those students looking for a position in finance quite well, including that of risk management.

Risk management is one of the most dynamic fields in the financial services industry today and has experienced considerable growth over the past several years, fueled by the complexity of financial products, increased regulation, and recent notable failures. To meet the challenges of the times, the FRM program offers a rigorous course of study covering all the key areas of financial risk. Demand for this certification has grown rapidly with registrations topping 80,000 in 2019. The FRM stands as the global standard in professional risk management certification, with over 59,000 Certified FRMs in 150 countries and territories across the globe. Furthermore, the FRM program was also recently approved by the Investment Industry Regulatory Organization of Canada (IIROC) for inclusion in its continuing education (CE) program for licensed financial professionals, which is indicative of the importance of strong risk management skills in the field of finance.

I have been in touch with Dr. Bin Chang to work with her to establish an academic partnership with the new program as well. The planned curriculum will dovetail quite nicely with the FRM certification and will provide your students with additional opportunities through exam

*Original Program Name

scholarships, possible research fellowships to further their skill set in the area of financial risk management. When the first intake of students occurs, I welcome the opportunity to work with them.

If there is anything more I can do, or additional information I can provide, please do not hesitate to reach out to me directly via email at lisa.ponti@garp.com or by phone at (201) 719-7233. All the best for a safe and productive semester!

Sincerely,

DocuSigned by:

6744504797D742B...

Lisa S. Ponti, PhD
Vice President – Educational Outreach