

**FIN 7140 (G01) (3.0 CH)**  
**FINANCIAL MODELING**  
**SUMMER 2022**

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**INSTRUCTOR**

|        |                         |                  |   |
|--------|-------------------------|------------------|---|
| Name:  | Ying Zhang              | Office Location: | Drake 466                               |
| Phone: | 204-474-9480            | Office Hours:    | by appointment                          |
| Fax:   | 204-474-7545            | Office Location: | Drake 122                               |
| Email: | ying.zhang@umanitoba.ca | Class Time:      | Tuesdays and Thursdays 6:15pm - 9:30 pm |

**COURSE DESCRIPTION**

The objective of this course is to provide you with a practical perspective of the application of major finance models using Microsoft Excel. At the end of the course, students should have a good appreciation for the development and use of spreadsheet-based financial models, implementation of a concise and sound methodology, and utilization of financial theory over a wide range of applications used by practitioners in the financial industry.

This course aims to prepare students for success by building a toolkit for financial modeling. The course will benefit students aspiring to a career in financial-services including investment banking, private equity, portfolio management, research, and consulting. It will also benefit students interested in a corporate-finance career.

**COURSE OBJECTIVES**

On course completion, you should be able to:

- Be familiar with financial models.
- Use Microsoft Excel to solve financial problems.
- Work with Bloomberg terminals.

## AACSB Assurance of Learning Goals and Objectives.

The Asper School of Business is proudly accredited by AACSB. Accreditation requires a process of continuous improvement for the School and our students. Part of “student improvement” is ensuring that students graduate with the knowledge and skills they need to succeed in their careers. To do so, the Asper School has set the **learning goals and objectives** listed below for the **MBA Program**. The checked goal(s) and objective(s) will be addressed in this course and done so by means of the items listed next to the checkmark.

|   | Goals and Objectives in the MBA Program  | Goals and Objectives Addressed in this Course | Course Item(s) Relevant to these Goals and Objectives |
|---|--|---|---|
| 1 | <b>Strategic Thinking</b> Students will think critically and creatively about solutions to organizational problems, considering short-term and long-term goals, resources, risks, and opportunities. |   |   |
|   | A. Students are able to identify situations where strategic thinking is necessary.   |   |   |
|   | B. Students are able to identify different strategies.   |   |   |
|   | C. Students are able to perform a basic strategic analysis.  |   |   |
|   | D. Students are able to recommend strategic alternatives and their implementations.  |   |   |
| 2 | <b>Global Perspective</b> Students will adopt a global mindset in considering organizational decisions.  |   |   |
|   | A. Students have an awareness of global diversity, and multicultural awareness.  |   |   |
|   | B. Students have an awareness of different global perspectives.  |   |   |
|   | C. Students have been exposed to global business environments through course materials   |   |   |
| 3 | <b>Ethical Mindset</b> Students will consider ethical and moral issues when analyzing and recommending solutions to organizational problems.   |   |   |
|   | A. Students demonstrate an understanding of the responsibility of business in society.   | ✓   | Ethics Learning                                       |
|   | B. Students demonstrate an understanding of ethical decision making.   | ✓   |   |
|   | C. Students demonstrate moral development in ethical decision making.  | ✓   |   |
|   | D. Students demonstrate an understanding of the responsibilities of a leader's role as it relates to ethics.   | ✓   |   |
| 4 | <b>Quantitative and Financial Proficiency</b> Students will demonstrate the ability to approach organizational issues using quantitative and financial analysis.                                     |   |   |
|   | A. Students are able to identify that a problem containing a quantitative aspect exists.   | ✓   | Entire Course   |
|   | B. Students are able to apply financial methodologies in the answering of business questions.  | ✓   |   |
|   | C. Students are able to demonstrate a basic financial proficiency in understanding the role and flow of money in an organization.  | ✓   |   |
|   | D. Students are able to interpret the results of a financial analysis.   | ✓   |   |

## COURSE MATERIALS

1. **Lecture notes** - Lecture notes will be available on the course's UM learn site. Students are responsible for checking UM learn and downloading the relevant material before each class.
2. **Computer** - Students are required to use their computer for every class and be ready to work with Microsoft Excel.
3. **Other course material** - I will post announcements, notes, Excel spreadsheets, and other course materials on the course UM learn site. You are responsible for downloading, printing, and reading the relevant materials

### RECOMMENDED TEXT:

Simon Benninga, *Financial Modeling: Fourth Edition*, The MIT Press, Cambridge, Massachusetts, 2014.

Please respect copyright laws. Photocopying textbooks or other reading material is a violation of copyright laws and is unethical, unless permission to copy has been obtained.

## COURSE FORMAT AND ONLINE ACCESS

This course will be taught in-person, unless there's a directive from the university that requires us to move to remote delivery. We will observe the health-related safety protocol mandated by the university. Please check the [COVID-19 Updates](#) webpage of the university and the [COVID-19 health and safety protocols](#) to know what is expected of you. The university's policy is also provided later in this course outline.

The course will be taught in the form of lab sessions. The lab sessions are designed to implement financial models acquired in the prerequisite course using Excel. The advantage of spreadsheet modeling for financial management and model valuation is well established and widely accepted. Since the main focus of the course is "hands-on" learning of financial modeling, it is necessary that students will be comfortable with the theoretical models taught in the prerequisite courses.

## TECHNOLOGICAL REQUIREMENTS

In the event health mandates or the instructor falling sick for an extended period require switching to remote delivery of classes, you will need a device enabled with a camera and microphone. Further, you will have to be in a location with a stable Internet connection that is strong enough for streaming video.

For exams that will be administered via the Respondus Lockdown browser, you will need a device (computer or iPad; note that smartphones and Chromebooks will not work) with one of the following operating systems:

Windows 10 or 8 (note: will not work with Windows 10S)

MacOS 11.1+ to 10.12

iPad iOS: 11.0+ (will not work with other tablets)

Memory: 2 GB RAM

Hard Disk Space: 200 MB of free hard disk space for program files

You will need the Chrome browser. Other browsers such as Safari will not work.

## COURSE ASSESSMENT

Student progress will be assessed through:

- BMC Modules .....5% (each worth 2.5%)
- Midterm Exam.....30%
- Quiz .....5%
- Term Project .....35%
- Project Presentation .....25%
- Total .....100%

Please note that the term project grade is a combination of the grade assigned by me and group-member evaluation. For the group-member evaluation, students will evaluate each of the group members with which they prepared the term project. The group-member evaluation is based on the member's contribution to the analysis and write-up of the term project. Please note that all group members are expected to significantly contribute to the project. Failing to meaningfully participate in solving the project will result in failing the course. Also, please remember that the only way you can do the term project and contribute to your group is if you are actually in class (see attendance requirements above).

The presentation grade is based on my own evaluation of every group member's presentation. Every group member will be evaluated individually based on (but not limited to) criteria such as: analysis, understanding of the concepts, delivery, and communication style, and visuals.

A grade of zero will be given to a missed examination without a legitimate reason. Students who miss the examination for a legitimate reason (medical, compassionate, academic conflict or university sports team travel) must apply to the Graduate Program Office for possible deferred examination privileges.

The midterm exam and quiz is closed-book. You are allowed to bring one double-sided 8.5" x 11" sheet with anything **hand written** on it for both the midterm and quiz. You can (and should) also bring a financial calculator. In the event that your calculator is programmable you may NOT enter any text, formulas, or data.

Final grades are based on the student's weighted mark and performance relative to other students. The following are the tentative grade cut-offs.

| Cumulative Marks | Grade | GPA | Performance    |
|------------------|-------|-----|----------------|
| 90-100           | A+    | 4.5 | Excellent      |
| 80-89.99         | A     | 4.0 | Very Good      |
| 75-79.99         | B+    | 3.5 | Good           |
| 70-74.99         | B     | 3.0 | Satisfactory   |
| 65-69.99         | C+    | 2.5 | Marginal       |
| 60-64.99         | C     | 2.0 | Unsatisfactory |
| 50-59.99         | D     | 1.0 | Unsatisfactory |

|                 |   |     |                |
|-----------------|---|-----|----------------|
| 49.99 and below | F | 0.0 | Unsatisfactory |
|-----------------|---|-----|----------------|

**NOTE: Class attendance is required. Missing more than 20% of this course due to absences may result in a failing grade. It is your responsibility to inform your professor in advance of your absence and the reason for it (medical documentation or employer note if away for a work commitment) is required. The professor decides how to deal with the impact of missed classes on your final grade.**

### **BLOOMBERG MARKET CONCEPTS (BMC)**

You are expected to complete two sections of the self-paced course Bloomberg Market Concepts (BMC). BMC will expose you to some of the most frequently used Bloomberg Terminal commands.

BMC consists of three sections- Core Concepts (includes four modules: Economic Indicators, Currencies, Fixed Income, and Equities), Getting Started on the Terminal and Portfolio Management. You are required to complete the **Core Concepts** and **Getting Started on the Terminal** sections for this class.

To register for BMC, please follow the steps below:

- 1) Please go to <https://portal.bloombergforeducation.com/>
- 2) SIGN UP, enter your name and university email address, generate a password and please tick to confirm you are taking BMC as part of a group.

**GROUP CODE: NZ9H3XRGW5**

- 3) Accept the Terms of Service and commence the course.

There are multiple quiz questions and case studies throughout the course to assess your understanding. Please note that I will receive a report with details of your performance on the Core Concepts and Getting Started on the Terminal.

### **TERM PROJECT**

The term project will be handed out at least two weeks prior to the due date. The project is due at **5 pm** on **Tuesday, Jun 14<sup>th</sup>**. Late submission will not be accepted. All projects must be typed. Hand written projects will not be accepted under any circumstances.

### **ATTENDANCE**

Class attendance is important if students are to derive maximum benefit from the course. Moreover, the term project is based on methodology covered in class. The only way you can do the term project and contribute to your group is if you attend classes regularly. You are responsible for knowing what occurs in class which may include material not covered in the readings, modifications to the syllabus and announcements concerning the term project, presentations, or examination.

### **ELECTRONIC DEVICE POLICY**

Students are expected to demonstrate professional conduct for the duration of the course. Some aspects of this include the following: attending each class and arriving on time, restricting discussions in class to the current course material, keeping mobile phones in the "off" or "silent" modes, and not placing or answering calls, text messages, or emails during class time. Unprofessional conduct is disruptive to the learning environment and makes mastering the course material more difficult for all students. Please obtain the permission of the instructor prior to audio/video-recording a lecture.

### OUT-OF-CLASS COMMUNICATION

UM Learn is the primary portal for accessing and distributing course materials. Announcements outside of class will be sent by e-mail from UM Learn. It is your responsibility to check your U of M e-mail account frequently so that you don't miss these emails.

### ETHICS IN FINANCE

Although this is not an ethics course, one session will be devoted to Ethics in Finance.

### TENTATIVE COURSE SCHEDULE

| <b>Dates</b>     | <b>Topic</b>   |
|------------------|--|
| May 10           | Hypothesis Testing <ul style="list-style-type: none"> <li>• The Rejection Region Method</li> <li>• P-value Method</li> </ul>   |
| May 12 to May 17 | Simple Linear Regression <ul style="list-style-type: none"> <li>• Ordinary Least Squares Estimation of Beta and the Security Market Line</li> <li>• The Market Model</li> </ul>  |
| May 19           | Multiple Linear Regression <ul style="list-style-type: none"> <li>• Estimating Fama-French Three Factor Model</li> <li>• Portfolio Performance Evaluation</li> </ul>   |
| May 24-26        | Value-at-Risk (VaR) <ul style="list-style-type: none"> <li>• The Parametric Method</li> <li>• The Historical Pattern Method</li> <li>• The Monte Carlo Simulation Method</li> <li>• Estimating Bond Portfolio VaR</li> </ul> |
| May 26           | Option Pricing Models  |
| May 31           | Midterm<br>Ethics in Finance   |
| Jun 2 to 16      | Building financial models  |

## IMPORTANT DATES

- Voluntary Withdrawal by: Jun 8<sup>th</sup>, 2022
- **BMC** is due Jun 16<sup>th</sup>, 2022
- **Project is due:** Jun. 14<sup>th</sup>, 2022 at 5 pm
- **Midterm Exam: May 31<sup>st</sup>, 2022 6:15 pm-7:45 pm**
- **Quiz: Jun 2<sup>nd</sup>, 2022 6:15 pm -6:45 pm**

## ACADEMIC REGULATIONS AND STUDENT SERVICES

### HUMAN ETHICS APPROVAL FOR DATA COLLECTION

As part of coursework, if you will be collecting data from people who are not students in this class, you must obtain Human Ethics approval from the UofM's Research Ethics Board (REB) prior to data collection. This applies to data collection such as surveys, interviews, focus groups, experiments, video recording, etc., where a respondent is solicited for participation.

If the entire class will be working on the same project, your instructor will apply for human ethics approval from the REB. If individuals or small groups of students will be working on different projects, it is the responsibility of the students to obtain approval (only one group member needs to apply). Your instructor will tell you whether s/he will be or you need to. When in doubt, please talk to your instructor.

Instructions and forms to apply for human ethics approval can be found at:

<http://umanitoba.ca/research/orec/ethics/guidelines.html>

In most cases, you will be using the "Protocol Submission Form" which is under the "REB Forms - Fort Garry Campus" heading.

It can take up to six weeks to process human ethics applications and obtain approval. Therefore, plan early. Note that approval must be obtained prior to data collection and cannot be obtained during the data collection phase or retroactively. Violation can get you, your instructor, and the Asper School in serious trouble with the REB.

If you will be collecting data only from other students in the class, you do not need REB approval. If you have any questions, please contact [humanethics@umanitoba.ca](mailto:humanethics@umanitoba.ca) or your instructor.

### UNCLAIMED ASSIGNMENT POLICY

Pursuant to the FIPPA Review Committee's approved recommendations of August 15, 2007, all unclaimed student assignments will become the property of the faculty and will be subject to destruction six months after the completion of any given academic term.

## STUDENT SERVICES AND SUPPORTS

The University of Manitoba provides many different services that can enhance learning and provide support for a variety of academic and personal concerns. You are encouraged to visit the below websites to learn more about these services and supports. If you have any questions or concerns, please do not hesitate to contact your instructor or the Graduate Program Office.

| For Information on...   | ...follow this link                                      |
|---|--|
| Course Outlines, Year-at-a-Glance, Concentrations, Textbooks, VW Dates and Final Exams  | <a href="#">MBA Course Information</a>                   |
| Exam Rescheduling Policy - <i>Please refer to Missing a Test/Exam on page 18 of the MBA Student Handbook</i>  | <a href="#">MBA Student Handbook</a>                     |
| Help with research needs such as books, journals, sources of data, how to cite, and writing   | <a href="#">Library Resources</a>                        |
| Tutors, workshops, and resources to help you improve your learning, writing, time management, and test-taking skills                                  | <a href="#">Writing and Learning Support</a>             |
| Support and advocacy for students with disabilities to help them in their academic work and progress  | <a href="#">Student Accessibility Services</a>           |
| Copyright-related questions and resources to help you avoid plagiarism or intellectual property violations  | <a href="#">Copyright Office</a>                         |
| Student discipline bylaws, policies and procedures on academic integrity and misconduct, appeal procedures  | <a href="#">Academic Integrity</a>                       |
| Policies & procedures with respect to student discipline or misconduct, including academic integrity violations                                       | <a href="#">Student Discipline</a>                       |
| Students' rights & responsibilities, policies & procedures, and support services for academic or discipline concerns                                  | <a href="#">Student Advocacy</a>                         |
| Your rights and responsibilities as a student, in both academic and non-academic contexts   | <a href="#">Your rights and responsibilities</a>         |
| Full range of medical services for any physical or mental health issues   | <a href="#">University Health Service</a>                |
| Information on health topics, including physical/mental health, alcohol/substance use harms, and sexual assault                                       | <a href="#">Health and Wellness</a>                      |
| Any aspect of mental health, including anxiety, stress, depression, help with relationships or other life concerns, crisis services, and counselling. | <a href="#">Student Counselling Centre</a>               |
| Support services available for help regarding any aspect of student and campus life, especially safety issues   | <a href="#">Student Support Case Management</a>          |
| Resources available on campus, for environmental, mental, physical, socio-cultural, and spiritual well-being  | <a href="#">Live Well @ UofM</a>                         |
| Help with any concerns of harassment, discrimination, or sexual assault   | <a href="#">Respectful Work and Learning Environment</a> |
| Concerns involving violence or threats, protocols for reporting, and how the university addresses them  | <a href="#">Violent or Threatening Behaviour</a>         |



## ACADEMIC INTEGRITY

I.H. Asper School of Business, The University of Manitoba

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It is critical to the reputation of the I. H. Asper School of Business and of our degrees that everyone associated with our faculty behaves with the highest academic integrity. As the faculty that helps create business and government leaders, we have a special obligation to ensure that our ethical standards are beyond reproach. Any misconduct in our academic transactions violates this trust. The University of Manitoba Graduate Calendar addresses the issue of academic misconduct under the heading "Plagiarism and Cheating." Specifically, acts of academic misconduct include, but are not limited to:

- using the exact words of a published or unpublished author without quotation marks and without referencing the source of these words
- duplicating a table, graph or diagram, in whole or in part, without referencing the source
- paraphrasing the conceptual framework, research design, interpretation, or any other ideas of another person, whether written or verbal (e.g., personal communications, ideas from a verbal presentation) without referencing the source
- copying the answers of another student in any test, examination, or take-home assignment
- providing answers to another student in any test, examination, or take-home assignment
- taking any unauthorized materials into an examination or term test (crib notes)
- impersonating another student or allowing another person to impersonate oneself for the purpose of submitting academic work or writing any test or examination
- stealing or mutilating library materials
- accessing tests prior to the time and date of the sitting
- changing name or answer(s) on a test after that test has been graded and returned
- submitting the same paper or portions thereof for more than one assignment, without discussions with the instructors involved.

Many courses in the I. H. Asper School of Business require group projects. Students should be aware that group projects are subject to the same rules regarding academic misconduct. Because of the unique nature of group projects, all group members must exercise extraordinary care to insure that the group project does not violate the policy on Academic Integrity. Should a violation occur on a group project, all group members will be held jointly accountable, no matter what their individual level of involvement in the specific violation.

Some courses, while not requiring group projects, encourage students to work together in groups (or at least do not prohibit it) before submitting individual assignments. Students are encouraged to discuss this issue as it relates to academic integrity with their instructor to avoid violating this policy.

In the I. H. Asper School of Business, all suspected cases of academic misconduct involving a graduate student (i.e. MBA, MFin, MScM, MSc or PhD student) will be reported directly by the instructor to the Dean of the Faculty of Graduate Studies.

## **UNIVERSITY OF MANITOBA COVID-19 HEALTH & SAFETY POLICY**

**April 8, 2022**

The University of Manitoba (the “UM”) is committed to maintaining a safe learning environment for all students, faculty, and staff. Should campus operations change because of health concerns related to the COVID-19 pandemic or other campus-wide emergency, it is possible that this course will move to a fully remote delivery format. Should the instructor be required to stay at home for an extended period and an alternate instructor not be available, the course may move temporarily to a remote delivery format.

### **Mask Wearing**

In a face-to-face environment, our commitment to safety requires students to observe all Covid guidelines set by the University (<https://umanitoba.ca/coronavirus>)

**While on campus and in class, you must wear masks** as stipulated in current [University policies, procedures, and guidelines](#). The University highly recommends the use of KN-95 masks; the minimum requirement is a ATSM Level 2 Medical mask. Both mask types are available at many locations on campus.

Students who fail to comply are subject to disciplinary action in accordance with the [Student Discipline Bylaw](#) and the [Non-Academic Misconduct and Concerning Behaviour Procedure](#).

If you do not follow masking requirements, you will be asked to leave the learning space and may only return to the class already in progress when you have complied with this requirement. Repeated issues will result in disciplinary action as previously noted.

**Students should not eat or drink during class time.**

### **Illness**

Remember: **STAY HOME IF YOU HAVE SYMPTOMS OR ARE ILL**. If you become ill we highly recommend that you [self-isolate](#); you should notify your instructor by email so you can develop a plan to complete the course learning outcomes while you are absent.

What to do if you become ill while at UM:

1. Leave the classroom, lab, or workspace immediately. Continue to wear your mask while leaving the premises and/or while waiting for transportation.
2. Perform hand hygiene (soap and water or hand sanitizer) and avoid contact with others and minimize contact with the physical environment.
3. Once at home, complete the [MB self-assessment](#) and follow the directions that are provided.
4. Inform your instructor(s) or, if in residence, the appropriate individual.

5. Please remain off-campus and all UM facilities until cleared to return in accordance with self-assessment, testing results, and UM recommended isolation procedures.

**Recommended transportation options (in order):**

1. Drive yourself home.

2. Pick-up by family or friend – remember to keep your mask on and to distance as much as possible, and where possible, open a window to improve ventilation.

3. Pickup by taxi/Uber:

- Remain masked and perform hand hygiene before entering the vehicle.
  - Avoid touching the inside of the vehicle
  - Keep your mask on for the duration of the ride
  - Where possible, open a window to improve ventilation.

4. Winnipeg Transit buses – We recommend that you do not use Winnipeg Transit in this situation.

## FACULTY BIOGRAPHY

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I.H. Asper School of Business, The University of Manitoba

**Ying Zhang, Ph.D., CFA**  
Department of Accounting and Finance  
I.H. Asper School of Business

Dr. Ying Zhang is an Associate Professor of Finance and received her Ph.D. in Finance from Concordia University. She is also a CFA charterholder and currently serves on the CFA Society Winnipeg board as the Ethics Challenge Chair.

Dr. Ying Zhang has taught a variety of finance courses including Corporate finance, Investment, and Financial modeling. Her research interests include corporate governance, financial restatement, executive compensation, and market microstructure. Her work has been published in refereed journals such as Journal of Corporate Finance, Journal of Business Finance and Accounting, Journal of International Financial Markets, Institutions, & Money, and the Journal of Multinational Financial Management. She has presented her works at primary academic conferences, and served as ad hoc reviewer for several academic journals and conferences. She is the recipient of Associates Achievement Award for Research and Engagement, and Best paper award on Trading by the Toronto Stock Exchange.