

UNIVERSITY OF MANITOBA
FACULTY OF ARTS DEPARTMENT OF
ECONOMICS

ECON 2050: ECONOMIC ANALYTICS USING COMPUTER-BASED METHODS
FALL 2022

Overview

Excel is the most important application (besides word processing) in academia, industry, and government. It is also an effective platform for learning analytical skills you will use in your business, professional, and academic careers.

Course Details

Number of Credit Hours: 3

Class times: This course is online via UMLearn. *There are no formal lectures*, and students must monitor their university assigned email and the course program on UMLearn for all course notices.

Location for in-class exams: **Machray Hall- Room Numbers 111, 113 and 115.**

Pre-Requisites: A grade of “C” or better in six credit hours of 1000-level Economics. Students may not hold credit for ECON 2050 and the former ECON 2610 titled “Measurement and Computation in Economics.”

Instructor Contact Information

Instructor: [Thuhid Noor](#)

Office Hours: **Thursdays;** 1.00 PM – 3.00 PM

E-mail: noormt@myumanitoba.ca

Course description

This computer-based course will introduce basic economic analytics such as index numbers, cost-revenue-profit relationships, demand/supply dynamics, decision-making using probability models, investment decisions, time-value of money, seasonal adjustment of data, forecasting, measures of poverty/inequality, and optimization methods such as linear programming. Students will also gain proficiency in numerical computation conducted in Excel, an important analytical tool used in business, government, and academic research for managing and analyzing data.

Course objectives

By taking this course, you will:

- Learn how to apply economic and business analytics to a wide range of common challenges faced by researchers as used in academia, industry, and government research.
- Understand how Excel can support the development of economic and business models/metrics to support performance measurement, forecasting, and simulation.
- Gain confidence in teaching yourself more advanced excel techniques to manage complex data and develop solutions to unique problems.

What do you need to start?

You do not need to know Excel to take this course, but you should know your way around a computer, a PC or a Mac.

You will need to install Office on your computer, which you may purchase online from [Computers on Campus](#) for less than \$25 (PC or Mac) or use Office 365 (which has a costly annual fee) but not the free student version since the Excel on that system lacks some important features. Do not use other spreadsheet programs, as the course materials and tests will not align.

If you have difficulty viewing the videos, download and install [VLC Media Player](#). It is always good to have this app on any PC/MAC for seamless video experiences.

This course requires you to have the physical ability to use a standard PC or Mac (notebook or desktop), which means the ability to “keyboard,” visualize detailed information on the screen, navigate websites, and input complex alphanumeric information within specified time constraints of the tests. If you believe you may have trouble doing this, please consult with [Student Accessibility Services](#) to determine whether accommodations are possible.

How is this course different from a conventional course?

- There are **no formal lectures**, and at **no time will the entire class meet in one place (physically or online)**.
- You can decide to learn everything at once.
- Most of you will find it better to follow the learning schedule (below).
- The night before a test or final exam is not generally recommended.

This course runs through [UMLearn](#). Once you register for this course and have a valid University of Manitoba email account, you can access course materials and tests.

After you log on to UM Learn, click on the course (ECON 2050) icon to find the course modules, including Lectures (.pdf), videos, examples, exercises, and answers.

Students must know the procedures and processes used by UMLearn. You may learn this system using the [Instructional videos](#). (You must have a valid account at the University of Manitoba to access this material. Contact [Information Services and Technology](#) for assistance). Also, you must activate a Webex account since this is how you will participate in virtual office hours.

The examples, exercises and videos often contain tips, tricks, and techniques not covered in the lecture notes. The tests and final exam may include anything posted on UMLearn for this course.

Additional resources

You should consider purchasing an advanced Excel manual such as *Excel 2019: the missing manual*, Matthew MacDonald, O'Reilley Press. This will be a handy reference for several years and augment the class materials.

There are many YouTube videos on Excel, some good, others not so much. Use it at your discretion. The help function in Excel (F1) will be your best friend for this course and your professional life.

All material posted on UMLearn for ECON 2050 is copyright to
Gregory Mason

How will we communicate?

My job is to help you learn, even though we do not meet in a lecture. Here are the ways you can meet me and discuss any aspect of this course.

- E-mail. Please use noormt@myumanitoba.ca. I will only communicate with you using the university-approved e-mail system. Please do not contact me using your personal e-mail, and I will ignore these messages.
- The course site also has a [Google Chat](#) where you can post questions.
- My virtual office hours are 1:00 – 3:00 on Thursdays, and you will be able to schedule a 15-minute slot. Please make a virtual appointment if you are having any problems or concerns about the course.

Assessing your performance

The final mark will be based on 60-minute in-class term tests (best 3 out of 5) and a final examination.

Component	Marks
Term Tests (Best 3 out of 5)	50
Final exam (2 hours) (In formal exam period)	50
Total	100
Numerical grade conversion: A+ (>90), A (>80), B+ (>75), B (>70), C+ (>65), C (>60), D (>50), F(<50)	

I use the table above to determine the final grade. But to give you the best chance of getting a good mark, I also use the following rule:

The course has five [Term Tests and a Final](#). All tests and the final exam will appear in UMLearn under the “Assignments” folder at precisely the date and time specified in the learning schedule (see below). Detailed answer keys as well rubrics will become available right after the end of the in-class exam.

- All tests are the open universe. You can use Excel’s online help function, any books on Excel, and the notes for this course.
- You cannot consult (talk, text, or e-mail) with anyone during the test, resulting in a score of 0.
- You cannot use your phone during the test or final exam for any reason, resulting in an immediate score of 0.
- Use conventional calculators so you can check your work.
- Make sure you understand the [University policy on cheating and plagiarism](#).

Under no conditions will a test or final exam be accepted outside the test/exam period or the Assignment process in UMLearn. UMLearn enforces the test download and upload deadlines. Many students fail to upload their tests within the allotted time period on the first test.

If you fail to upload your exam within the set time, you will get 0. I will not accept the test by email. Save and upload several times during the exam.

Academic integrity

Each student must read and understand university regulations regarding academic integrity as described in the General Calendar ([Plagiarism and Cheating](#) (Section 8.1) and [Personation at an examination](#) (Section 5.2.9)). Claims that these regulations were not understood will not be accepted.

These are unusual times, and remote testing offers all sorts of possibilities for collaboration. Since the tests and final are open book exams – the open universe– conventional cheating is not an issue. The tests feature a series of cascading steps of progressive difficulty; working jointly will slow you down. If you collaborate and share answers via e-mail this is academic dishonesty. Also, like an open book exam, the questions are more challenging. It will take more time and work to mask your collaboration than to know the material and answer it individually.

You must not share your answers via e-mail or text during the term tests and final exam. We have security processes to detect such collaboration, and they work, and every year has expulsions from the course because of academic dishonesty.

Provided you submit three (3) term tests, if the mark on the final is higher than the cumulative score on the term tests, I will only use the final exam to create the letter grade. If the final exam has a lower score than your cumulative score on the tests, I will combine the term tests and final exam using the above mark allocation to obtain the final numerical grade.

You must take and submit at least three term tests to benefit from this offer.

Example: Student X only wrote 2 term tests with scores of 27/50 and 41/50. Her final exam was 31/50. Her term tests totaled $(0/50+27/50+41/50)/3 = 22/50$. Add this to the final of 31, and the numerical total is 53/100, which is a D. Her failure to complete at least three term tests degraded her final mark, which would probably have been at least a "C."

Policy on missed term tests and final exam

You cannot repeat a missed term test. Therefore only the best 3 of 5 term tests count toward the final mark. Please do not ask for an exception for any reason. It will not be granted.

If you miss the final exam due to illness (no other reason), please email the instructor within 48 hours of the missed exam. The email must include your student number and a clear statement that you could not attend the final exam due to illness. You will be informed of the date for the deferred exam.

How to succeed in this course

The term tests anchor the course, the first of which occurs two weeks after the start ([see Learning Schedule](#)). The material is cumulative, and you will not be able to master the material the night before.

Here is how to succeed:

- Work through the lectures and watch the videos according to the learning schedule
- Review and repeat
- Try the exercises before looking at the answers. This is how you can know whether you understand the material

- Make sure you read and understand the detailed answer key provided after the end of each in-class exam.
- Form a study group with colleagues in the class
- Many concepts are complex but become clearer with careful reading and re-reading.

Test Strategy

It is tempting to believe that an open book, open web exam means you must study less than in a conventional course. This doesn't seem right. The tests and final exams are purposely structured so that only students with a working and detailed understanding of the procedures covered in the text and exercises will complete them. The open book/web exam allows you to look up details for a function or procedure but not learn and understand them during the exam.

Tips for taking the tests/exam:

- Read the entire question c-a-r-e-f-u-l-l-y
- Pause and plan your answer... most questions require you to add columns and rows to accommodate the calculations.
- The more you gain comfort with routine spreadsheet navigation, creating graphs, and constructing formulas, the more time you will have for thinking through your strategy and answering questions
- Practice, practice, and practice.

The tests/exams replicate the workplace, where you will face tight deadlines to complete tasks but will have access to print and web resources to solve a problem.

Additional information

- Students appealing any term work, whether it be an informal or formal appeal, must appeal their term work within 10 working days off receiving their mark.
- Please refer to Schedule "A" provided below for information on academic support, mental health support, copyright, and other supplemental information.

LEARNING SCHEDULE

Use the dates in the course schedule to manage your learning. Set aside a fixed time each week to work on this course, just as if you were taking lectures. For some, this may be challenging. With the flexibility of an online course, you need self-discipline.

Module Outline		
Progress Use these dates to check your progress		
Module 1	Sept 07	Orientation to Excel
Module 2	Sept 14	Understanding Data and Creating Graphs
Module 3	Sept 21	Basic Statistics
Test 1	<i>Wednesday, Sep 28, 17:30 – 18:30 (via UMLearn) Submit your Excel file throughout the test period, and your latest submission overwrites previous files. Submit something by 18:30, or UMLearn will lock you out. Each term test covers the Modules since the last Term Tests.</i>	
Module 4	Sept 30	Measuring, comparing, and modelling change
Module 5	Oct 8	Probability
Test 2	<i>Monday, Oct 17, 17:30 – 18:30 (via UMLearn) See above</i>	
Module 6	Oct 18	Regression 1
Module 7	Oct 24	Regression 2
Test 3	<i>Monday, Oct 31, 17:30 – 18:30 (via UMLearn) See above</i>	
Module 8	Nov 1	Time value of money and economic decisions
Module 9	Nov 6	Taxation and inequality
Test 4	<i>Wednesday, Nov 16, 18:30 – 18:30 (via UMLearn) See above</i>	
Module 10	Nov 17	Optimization
Module 11	Nov 22	Linear Programming
	<i>Nov 22</i>	Last date for voluntary withdrawal without academic penalty
Test 5	<i>Wednesday, Nov 30, 17:30 – 18:30 (via UMLearn) See above</i>	
Module 12	Dec 1	Matrix Operations and Array Formulas
Module 13	Dec 6	Modelling random processes
Final		TBD – The final covers all modules in the course and will be 2 hours.

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Fine Print

Section (a): A list of academic supports available to students, such as the Academic Learning Centre, Libraries, and other supports as may be appropriate:

Writing and Learning Support

The Academic Learning Centre (ALC) offers services that may be helpful to you throughout your academic program. Through the ALC, you can meet with a learning specialist to discuss concerns such as time management, learning strategies, and test-taking strategies. The ALC also offers peer-supported study groups called Supplemental Instruction (SI) for certain courses that students have typically found difficult. In these study groups, students have opportunities to ask questions, compare notes, discuss content, solve practice problems, and develop new study strategies in a group-learning format.

You can also meet one-to-one with a writing tutor who can give you feedback at any stage of the writing process, whether you are just beginning to work on a written assignment or already have a draft. If you are interested in meeting with a writing tutor, reserve your appointment two to three days in advance of the time you would like to meet. Also, plan to meet with a writing tutor a few days before your paper is due so that you have time to work with the tutor's feedback.

These Academic Learning Centre services are free for U of M students. For more information, please visit the Academic Learning Centre website at: <http://umanitoba.ca/student/academiclearning/>

You can also contact the Academic Learning Centre by calling 204-480-1481 or by visiting 201 Tier Building.

University of Manitoba Libraries (UML)

As the primary contact for all research needs, your liaison librarian can play a vital role when completing academic papers and assignments. Liaisons can answer questions about managing citations, or locating appropriate resources, and will address any other concerns you may have, regarding the research process. Liaisons can be contacted by email or phone, and are also available to meet with you in-person. A complete list of liaison librarians can be found by subject: <http://bit.ly/WcEbA1> or name: <http://bit.ly/1tJObB4>. In addition, general library assistance is provided in person at 19 University Libraries, located on both the Fort Garry and Bannatyne campuses, as well as in many Winnipeg hospitals. For a listing of all libraries, please consult the following: <http://bit.ly/1sXe6RA>. When working remotely, students can also receive help online, via the Ask-a-Librarian chat found on the Libraries' homepage: www.umanitoba.ca/libraries.

Section (b): A statement regarding mental health that includes referral information:

For 24/7 mental health support, contact the Mobile Crisis Service at 204-940-1781. Student Counselling

Centre

Contact SCC if you are concerned about any aspect of your mental health, including anxiety, stress, or depression, or for help with relationships or other life concerns. SCC offers crisis services as well as individual, couple, and group counselling. *Student Counselling Centre:*

<http://umanitoba.ca/student/counselling/index.html>

474 University Centre or S207 Medical Services (204) 474-8592

Student Support Case Management

Contact the Student Support Case Management team if you are concerned about yourself or another student and don't know where to turn. SSCM helps connect students with on and off-campus resources, provides safety planning, and offers other supports, including consultation, educational workshops, and referral to the STATIS threat assessment team. *Student Support Intake Assistant*

<http://umanitoba.ca/student/case-manager/index.html> 520 University Centre

(204) 474-7423

University Health Service

Contact UHS for any medical concerns, including mental health problems. UHS offers a full range of medical services to students, including psychiatric consultation.

University Health Service <http://umanitoba.ca/student/health/> 104

University Centre, Fort Garry Campus

(204) 474-8411 (Business hours or after hours/urgent calls)

Health and Wellness

Contact our Health and Wellness Educator if you are interested in information on a broad range of health topics, including physical and mental health concerns, alcohol and substance use harms, and sexual assault.

Health and Wellness Educator <http://umanitoba.ca/student-supports/student-health-and-wellness>

469 University Centre

(204) 295-9032

Live Well @ UofM

For comprehensive information about the full range of health and wellness resources available on campus, visit the Live Well @ UofM site: <http://umanitoba.ca/student/livewell/index.html>

Section (c): A notice with respect to copyright:

All students are required to respect copyright as per Canada's *Copyright Act*. Staff and students play a key role in the University's copyright compliance as we balance user rights for educational purposes with the rights of content creators from around the world. The Copyright Office provides copyright resources and support for all members of the University of Manitoba community.

Visit <http://umanitoba.ca/copyright> for more information.

Section (d): A statement directing the student to University and Unit policies, procedures, and supplemental information available online:

Your rights and responsibilities

As a student of the University of Manitoba you have rights and responsibilities. It is important for you to know what you can expect from the University as a student and to understand what the University expects from you.

Become familiar with the policies and procedures of the University and the regulations that are specific to your faculty, college or school.

The [Academic Calendar](http://umanitoba.ca/student/records/academiccalendar.html) <http://umanitoba.ca/student/records/academiccalendar.html> is one important source of information. View the sections *University Policies and Procedures* and *General Academic Regulations*.

While all of the information contained in these two sections is important, the following information is highlighted.

- If you have questions about your grades, talk to your instructor. There is a process for term work and final **grade appeals**. Note that you have the right to access your final examination scripts. See the Registrar's Office website for more information, including appeal deadline dates and the appeal form <http://umanitoba.ca/registrar/>
- You are expected to view the General Academic Regulation section within the Academic Calendar and specifically read the **Academic Integrity** regulation. Consult the course syllabus or ask your instructor for additional information about demonstrating academic integrity in your academic work. Visit the Academic Integrity Site for tools and support <http://umanitoba.ca/academicintegrity/> View the **Student Academic Misconduct** procedure for more information.
- The University is committed to a respectful work and learning environment. You have the right to be treated with respect, and you are expected to conduct yourself in an appropriately respectful manner. Policies governing behavior include the:

Respectful Work and Learning Environment

http://umanitoba.ca/admin/governance/governing_documents/community/230.html

Student Discipline

http://umanitoba.ca/admin/governance/governing_documents/students/student_discipline.html
and,

Violent or Threatening Behaviour

http://umanitoba.ca/admin/governance/governing_documents/community/669.html

- If you experience **Sexual Assault** or know a member of the University community who has, it is important to know there is a policy that provides information about the supports available to those who disclose and outlines a process for reporting. The **Sexual Assault** policy may be found at http://umanitoba.ca/admin/governance/governing_documents/community/230.html More information and resources can be found by reviewing the Sexual Assault site <http://umanitoba.ca/student/sexual-assault/>
- For information about rights and responsibilities regarding **Intellectual Property**, view the policy http://umanitoba.ca/admin/governance/media/Intellectual_Property_Policy_-_2013_10_01.pdf

For information on regulations that are specific to your academic program, read the section in the Academic Calendar and on the respective faculty/college/school web site <http://umanitoba.ca/faculties/>

Contact an **Academic Advisor** within our faculty/college or school for questions about your academic program and regulations <http://umanitoba.ca/academic-advisors/>

Student Advocacy

Contact Student Advocacy if you want to know more about your rights and responsibilities as a student, have questions about policies and procedures, and/or want support in dealing with academic or discipline concerns.

<http://umanitoba.ca/student/advocacy/> 520

University Centre

204 474 7423

student_advocacy@umanitoba.ca

Acknowledgment

I would like to thank **Professor Gregory Mason** for his outstanding guidance (developing the course) and for supplying his teaching materials for this course.