

Course Outline (Fall 2024)

MATH*1030 - Business Mathematics

University of Guelph

Section 01:

Class: M/W/F: 3:30pm - 4:20pm

Office Hours: TBA

Section 02:

Class: M/W/F: 10:30am - 11:20am

Office Hours: TBA

Prerequisite: 4U Advanced Functions

Restrictions: MATH*1080, MATH*1200.

(Not available to students registered in the BSC program).

Credit Weight: 0.50

Academic Department: Mathematics & Statistics

Campus: main

Semester Offering: Fall

Teaching Assistants: Announced via email

1 Course Notes:

Students must buy the 'fillable' lecture notes for this course at the University Bookstore (cost about \$35). (No textbook required).

2 What to bring to class

- The fillable lecture notes that you bought at the University Bookstore.
- Blank paper, pens/pencils.
- Scientific calculator, graphing calculator (optional, but recommended).

3 Class Schedule:

Posted in the Contents section of CourseLink

4 Content Description:

This course is primarily intended for business and economics students. The course is designed to introduce and reinforce the essential mathematical skills needed to understand, analyze, and solve business-related mathematical problems. Topics covered

include basic algebra; functions, including a review of exponential and logarithmic functions; sequences and series with financial applications; limits; continuity; and differential calculus including derivatives, higher order derivatives, and curve sketching.

5 Learning Outcomes:

- Demonstrate understanding of pre-Calculus including basic algebra.
- Demonstrate a thorough grounding of elementary functions.
- Demonstrate the ability to sketch and interpret a wide variety of graphs.
- Demonstrate understanding of elementary Differential Calculus.
- Demonstrate how to apply mathematics to some simple financial problems.

6 High-school algebra quiz (aka 'Algebra Quiz' or just 'quiz'):

Within the first 3 weeks of classes students must take a quiz covering high-school algebra. The quiz is based on a high-school algebra review, posted in the Contents section of Courselink. **Students should work through the review as soon as possible to prepare for the quiz.** Students should also work through the Chapter 2 material in the lecture notes. The completed notes for Chapter 2 are posted in the Contents section of Courselink. The quiz has 20 randomized questions and is available from the 'Quizzes' section on Courselink. **There is no time-limit to complete the quiz, and the quiz can be taken as many times as you like (within a 3 week period). Your highest grade out of all attempts will be recorded.**

7 Homework:

- Homework problems and solutions are posted in the Contents section of Courselink (attempt the problems first!). Homework is not graded, but will be the basis for the tests and final exam, so you are strongly encouraged to do (as a minimum) the assigned questions.
- You should attempt questions as soon as the appropriate sections have been covered in class.
- *For every examination question type there will be a similar question in the homework questions!* For this reason it is very important that you do the homework and follow up with your TA if you have problems.

8 Tests and final exam:

Exams are based mainly on examples done in class and homework. The tests and final exam are multiple-choice (MC) and the 3 tests are **in-class, during your regularly scheduled class.** The following table gives dates, test lengths and percentage weights:

Assessment	% Weight	Dates/duration
Algebra Quiz	10	Opens September 9, 8:30 am, Closes September 30, 11:30 pm (on-line)
MC Test 1	20	October 7, in-class (approx. 50 mins)
MC Test 2	20	October 28, in-class (approx. 50 mins)
MC Test 3	20	November 20, in-class (approx. 50 mins)
MC Final	30	December 3, 2:30-4:30pm. Location TBD.

The format of questions is very similar to the practice tests linked from Courselink. The syllabus for the tests and the final are posted on Courselink.

The Algebra Quiz is accessed from the 'Quizzes' section on Courselink (see above). The tests and final exam are given using Gradescope, so students fill in 'Bubble' sheets during class.

Solutions to the Tests will be posted on Courselink in due course.

9 Procedure for dropping the lowest test grade

(i) if there are 3 non-zero test grades (Tests 1, 2 & 3) then the lowest test grade is 'dropped', i.e. the grade on the dropped test is the average of the other two (equivalently, the two remaining tests are now worth 30% instead of 20%)

(ii) if you score zero on a test or the Algebra Quiz (unlikely!) the weight of that test goes to the final. So the final can have weights 30, 40, 50, ... , 100 %. See 'Academic consideration' below for what happens if you miss a test.

10 Teaching Assistants and Office hours

TAs provide face-to-face office hours. When available, a list of TAs along with their schedules will be provided on Courselink.

Please only attend the office hours that correspond to your last name: details - TBA.

If you need to see me please email me to make an appointment. This should be for when you need to discuss any concerns you have about the course or your performance, or you feel that a meeting with a TA did not resolve your math issues. **IF YOU NEED MATH HELP, PLEASE ALWAYS SEE THE TA WHO IS ALLOCATED TO YOU FIRST (NOT YOUR PROF!).**

11 The Math & Stats Learning Center:

The Mathematics & Statistics Department operates a drop-in learning center where you'll find a team of tutors that can help you understand and solve problems in Math*1030. The learning center is located on the third floor of the McLaughlin Library in the Science Commons. The hours of operation are as follows:

Monday	Tuesday	Wednesday	Thursday	Friday
9:30-15:30	10:00-16:00	9:30-15:30	10:00-16:00	9:30-14:30

See <https://mathstat.uoguelph.ca/tutoring>

12 Test preparation checklist:

Posted in the Contents section of Courselink.

13 Syllabus for the tests and final:

Posted in the Contents section of Courselink.

14 Practice tests and solutions:

Posted in the Contents section of Courselink.

15 Tests and solutions for this year (announced when ready)

Posted in the Contents section of Courselink when ready.

16 Texts recommended for background reading:

There are many books you can consult for background reading. For example:

- Calculus with Applications (9th Edit), M. Lial, R.N. Greenwell, N.P. Ritchey. Pearson/Addison Wesley, 2008.
- Concepts of Calculus with Applications, M. Goshaw. Pearson/Addison Wesley, 2008.
- Calculus (7th Edit), J. Stewart. Brooks Cole, 2012.
- Contemporary Business Mathematics with Canadian Applications (10 Edit), S.A. Hummelbrunner, K. Halliday, K.S. Coombs. Pearson, 2015.
- **Also, see the links in the Workbook to four open-access textbooks in Calculus and Pre-Algebra.**

17 Email Etiquette:

Although I try to respond to all email messages, please don't ask for class notes; tell me that you are going to miss a lecture; or generally ask me a question that you can find out for yourself. Keep your messages to the point, polite, and clearly state your question, with name, student ID, and course details.

18 Email Communication:

As per university regulations, all students are required to check their <uoguelph.ca> e-mail account regularly: e-mail is the official route of communication between the University and its students.

19 Academic consideration:

- There will be NO MAKE-UP TESTS OR MAKE-UP QUIZ. If you miss a Test or Quiz due to serious illness of yourself or a death in your immediate family, or due to personal grounds, please contact me by email ASAP explaining the reason for missing the test. You do NOT need to get a doctor's note. If consideration is granted I will readjust the weight of assessed material (see item 21 below). HOWEVER, ONCE YOU HAVE TAKEN AN EXAM NO ACCOMMODATIONS CAN BE GRANTED (it is a general University of Guelph procedure to NOT grant accommodations retrospectively). For further details concerning Academic Consideration see
- <https://calendar.uoguelph.ca/undergraduate-calendar/undergraduate-degree-regulations-procedures/academic-consideration-appeals-petitions/>
- UNDER NO CIRCUMSTANCES WILL ANY EXAM BE RE-SCHEDULED AT A DIFFERENT TIME AND/OR DATE.
- If you miss the final due to catastrophic events such as serious illness of yourself or death of your immediate family, you will receive an "Incomplete" grade, then (depending on circumstance) you may be allowed to take a make-up exam to receive a letter grade. If this happens contact your program counsellor, not me.

20 Illness:

Medical notes will **not** normally be required for singular instances of academic consideration, although students may be required to provide supporting documentation for multiple missed assessments or when involving a large part of a course (e.g., final exam or major assignment).

21 Procedure used to re-adjust the weight of assessed material:

If consideration is given for missing a test (see item 19 above) or the Quiz, the percentage of missed material is moved to the final. Please DO NOT ASK FOR ALTERNATE ARRANGEMENTS AS FOR REASONS OF FAIRNESS TO OTHER STUDENTS IT WILL NOT BE GRANTED.

22 Regulations regarding seeing your final exam:

If you wish to see your final you must submit your **written** request to the chair of the department by the 5th class day of the new semester, see

<https://calendar.uoguelph.ca/undergraduate-calendar/undergraduate-degree-regulations-procedures/examinations/>

If you are granted permission to see your final you will be provided with: (a) your electronic answers, (b) a copy of the exam paper, and (c) written solutions.

23 Regulations regarding a grade-reassessment:

If you believe that an error has been made in the determination of your final grade then you must **write** to the chair of the department (by the 10th class day of the new semester) requesting a grade re-assessment. This can lead to the grade staying the same, a grade increase, or a grade decrease. Please note that this should not be used as a means of 'trying to get a few extra marks', but for situations where you have grounds for believing that mistakes have been made in the determination of your final grade. For further information see

<https://calendar.uoguelph.ca/undergraduate-calendar/undergraduate-degree-regulations-procedures/grade-reassessment/>

24 Copies of Out-Of-Class Assignments

Keep paper and/or other reliable back-up copies of all out-of-class assignments: you may be asked to resubmit work at any time.

25 Academic Accommodation of Religious Obligations

If you are unable to complete a course requirement due to religious obligations, please let the instructor know within the first two weeks of class. See the academic calendar for more information:

<https://calendar.uoguelph.ca/undergraduate-calendar/undergraduate-degree-regulations-procedures/academic-accommodation-religious-obligations/>

26 Academic Integrity:

The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community, faculty, staff, and students to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection. Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor. The Academic Misconduct Policy is detailed in the Undergraduate Calendar. The Academic Misconduct Policy

<https://calendar.uoguelph.ca/undergraduate-calendar/undergraduate-degree-regulations-procedures/academic-misconduct/>

is outlined in the Undergraduate Calendar.

27 Use of chatGPT and other AI software

Artificial intelligence (AI) software such as chatGPT and Microsoft's Bing AI chatbot are very useful tools for learning mathematics. However, please familiarize yourself with what constitutes academic misconduct when using AI tools. See the university policy:

<https://news.uoguelph.ca/2023/03/university-of-guelph-statement-on-artificial-intelligence-systems-chatgpt-academic-integrity/>

Be cautious: these tools are not calculators. Blind reliance on their output often yields incorrect answers: I checked this with many examples! Verify any information they provide independently, as they may produce erroneous or misleading output. The educational utility of AI in mathematics will be a topic of in-class discussion.

28 Accessibility:

The University promotes the full participation of students who experience disabilities in their academic programs. To that end, the provision of academic accommodation is a shared responsibility between the University and the student. When accommodations are needed, the student is required to first register with Student Accessibility Services (SAS). Documentation to substantiate the existence of a disability is required, however, interim accommodations may be possible while that process is underway.

Accommodations are available for both permanent and temporary disabilities. It should be noted that common illnesses such as a cold or the flu do not constitute a disability. Use of the SAS Exam Centre requires students to make a booking at least 10 business days in advance, and no later than the first business day in November, March or July as appropriate for the semester. Similarly, new or changed accommodations for online quizzes, tests and exams must be approved at least a week ahead of time. More information: <https://wellness.uoguelph.ca/accessibility>.

29 Drop date:

Courses that are one semester long must be dropped by the end of the last day of classes; two-semester courses must be dropped by the last day of classes in the second semester.

The regulations and procedures for dropping courses are available in the Undergraduate Calendar, see

<https://calendar.uoguelph.ca/undergraduate-calendar/undergraduate-degree-regulations-procedures/dropping-courses/>

30 Course Evaluation Information - evaluations are done online. See the format at:

https://mathstat.uoguelph.ca/sites/uoguelph.ca.mathstat/files/public/TeachevaluationformW16_1.pdf.

31 Recording of Materials:

Presentations which are made in relation to course work -- including lectures -- cannot be recorded without the permission of the presenter, whether the instructor, a classmate or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted. **No video recordings are permitted!**

32 Resources:

The [Academic Calendars](#) are the source of information about the University of Guelph's procedures, policies and regulations which apply to undergraduate, graduate and diploma programs.

33 Classes cancelled due to bad weather:

If bad weather (e.g. a snow day) causes classes to be cancelled on a test day, the test will be re-scheduled on the next regularly scheduled class.

34 Strike Action:

In the unlikely event of strike action by faculty, staff, or TAs that makes it difficult or impossible to teach the material on a test, the test will be cancelled and the weight re-distributed to the final.

35 Health and Wellbeing:

The University of Guelph provides a wide range of health and wellbeing services at the Vaccarino Centre for Student Wellness (<https://wellness.uoguelph.ca>). If you are concerned about your mental health and not sure where to start, connect with a Student Wellness Navigator (<https://wellness.uoguelph.ca/navigators>) who can help develop a plan to manage and support your mental health or check out our mental wellbeing resources (<https://wellness.uoguelph.ca/shine-this-year>). The Student Wellness team are here to help and welcome the opportunity to connect with you. You are not alone and you will not be judged for asking for help.

36 COVID-19 Disclaimer:

Please note that a resurgence of the COVID-19 pandemic may necessitate a revision of the format of course offerings, changes in classroom protocols, and academic schedules. Any such changes will be announced via Courselink and/or class email.

See the next page for the schedule.

Schedule for Math*1030 Fall 2024

(SECTIONS 01/02 – Instructor: M. Garvie)

Description: The sections below correspond to the sections in the fillable Workbook (aka lecture notes). This schedule is a rough guide only however I always finish the topics in time needed for a given test or quiz.

Lecture	Date	Sections	Notes
# 1	Sept 6	Introduction	
# 2	Sept 9	1.1 – 1.5	High-school algebra quiz opens
# 3	Sept 11	3.1 – 3.5, 4.1	
# 4	Sept 13	4.2 – 4.4 5.1 – 5.2	
# 5	Sept 16	5.3 – 5.5	
# 6	Sept 18	6.1	
# 7	Sept 20	6.2 – 6.4	
# 8	Sept 23	6.4 – 6.6	
# 9	Sept 25	6.7	
# 10	Sept 27	6.8, 6.9	
# 11	Sept 30	6.10	High-school algebra quiz closes
# 12	Oct 2	7.1 – 7.2	
# 13	Oct 4	7.3 – 7.4	
# 14	Oct 7	---	Test 1 (IN-CLASS)
# 15	Oct 9	7.5	
# 16	Oct 11	8.1	
(Oct 14 - No classes)			
# 17	Oct 16	8.2 – 8.3	
# 18	Oct 18	8.3 – 8.5	
# 19	Oct 21	8.6 – 8.8	
# 20	Oct 23	8.8, 9.1	
# 21	Oct 25	9.2 – 9.5	
# 22	Oct 28	---	Test 2 (IN-CLASS)
# 23	Oct 30	10.1 – 10.2	
# 24	Nov 1	10.2 – 10.3	
# 25	Nov 4	10.4 – 10.6	
# 26	Nov 6	10.7, 11.1 – 11.2	
# 27	Nov 8	11.3	
# 28	Nov 11	11.4	
# 29	Nov 13	11.5 – 11.6	
# 30	Nov 15	11.6 – 11.7	
# 31	Nov 18	11.8 – 11.9	
# 32	Nov 20	---	Test 3 (IN-CLASS)
# 33	Nov 22	12.1	
# 34	Nov 25	12.2	
# 35	Nov 27	12.3	
# 36	Nov 29	Catch-up	