Department of Mathematics & Statistics
Concordia University

MATH 209, Sec. CA

Fundamental Mathematics II

Summer 2021

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Preface: **Note that lectures and office hours will be held online. So will the mid-term and the final exam.** There will be video lectures via Zoom during the scheduled course hours and the slides will be subsequently posted on Moodle. The office hours will be held over Zoom and one can also send questions via email. Note that the system does not allow one to reply to a letter sent from Moodle. So emails should be sent from one's own mailer, not Moodle.

Textbook: *Calculus for Business, Economics, Life Sciences and Social Sciences*, 13th Edition, by Barnett, Zeigler, & Byleen. CUSTOM EDITION.
The digital version of the textbook will be available at:
https://pearsonhighered.onthehub.com/WebStore/ProductsByMajorVersionList.aspx
https://www.co-opbookstore.ca/service/textbooks/
The print version of the textbook will be available at:
https://www.bkstr.com/concordiastore/home
Note: Students should order textbooks as early as possible, especially for printed versions in case books are backordered or there are any shipping delays

Prerequisite: Math 206 or equivalent.

Math Help Centre: A Math Help Centre staffed by graduate students is available. The schedule of its operation will be posted on the Department webpage: https://www.concordia.ca/artsci/math-stats/services/math-help-centre.html.

MyLabMath: Students should buy the electronic version of the book. It will give access to **MyLabMath**. Once they have registered for **MyLabMath**, students can download the Pearson Etext 2.0 app so that they can access the textbook from their phone or tablet. The system provides you with a full electronic version of the text (an eBook) as well as many exercises and practice problems. Students will use this system to do online assignments (see **Assignments** below). Students are also strongly encouraged to use this resource to help with problems similar to assignment problems, and in areas where they need extra assistance. If you have an old **MyLabMath** account, please refer to the footnote* on page 2.

Assignments: Students are expected to submit assignments online using **MyLabMath**. Late assignments **will not** be accepted. Assignments contribute 5% to your final grade. Working regularly on the assignments is essential for success in this course. Students are also strongly encouraged to do as many problems as their time permits from the list of supplementary problems included in this outline. A solutions manual for all odd-numbered questions is packaged with the textbook.

Calculators: Only calculators approved by the Department such as **Sharp EL 531** or the **Casio FX 300MS**, are permitted for the class test and final examination. See http://www.concordia.ca/artsci/math-stats/services.html #calculators for details.

Midterm Test: There will be one **midterm test,** based on the material of lectures 1-6, which will contribute up to 25% to your final grade (see the **Grading Scheme** below). **The midterm will be on Sunday, August 1, 2021 at 4:00 P.M. It will last 1 hour and 15 minutes. There is no alternate midterm.**

NOTE: It is the Department's policy that tests missed for any reason, **including illness,** cannot be made up. If you miss the midterm test **because of illness** ***(medical note required)*** the final exam will count for 95% of your final grade, and the assignments will count for the remaining 5%.

Final Exam: The final examination will be two hours long and will cover all the material in the course.

NOTE: Students are responsible for finding out the date and time of the final exams once the schedule is posted by the Examinations Office. Conflicts or problems with the scheduling of the final exam must be reported directly to **the Examinations Office**, **not to your instructor**. It is the Department's policy and the Examination Office's policy that students must be available to take the final exam on the selected date and time. Conflicts due to travel plans will not be accommodated.

Grading Scheme: The final grade will be based on the higher of (a) or (b) below:

a) 5% for the assignments,
25% for the midterm test,
70% for the final exam.

b) 5% for the assignments,
15% for the midterm test,
80% for the final exam.

IMPORTANT: **PLEASE NOTE THAT THERE IS NO "100% FINAL EXAM" OPTION IN THIS COURSE**.

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*If you are repeating this course and have an old **MyLabMath** account, you might be able to get your account extended. To request this, please contact our Pearson representative at **Christine.Cozens@PearsonEd.com** and provide the following information:

- Your full name and Concordia student ID number.
- The name of the course, section, and the term you are currently registered in (e.g. MATH 209/Section CA - Summer 2021).

Lectures	Topics	Supplementary Problems
1	2.1 Introduction to Limits 2.2 Infinite limits	p. 102: 11, 17, 25, 33, 41, 43, 45, 47, 61, 83. p. 114: 17, 43, 75, 81.
2	2.3 Continuity 2.4 The Derivative	p. 126: 15, 19, 21, 29, 35, 37. p. 141: 11, 23, 27, 35, 81.
3	2.5 Basic Differentiation 2.6 Differentials 2.7 Marginal Analysis in Business	p. 152: 19, 31, 47, 59, 91. p. 160: 23, 25, 31, 49. p. 169: 11, 15, 27, 33.
4	3.1 Review of the constant e and continuous interest 3.2 Derivatives of Exponential and Logarithmic Functions	p. 185: 11, 17, 29, 35, 47. p. 194: 13, 15, 21, 45.
5	3.3 Derivatives of Products & Quotients 3.4 The Chain Rule	p. 202: 11, 19, 25, 33, 93, 97. p. 212: 21, 24, 35, 51, 60, 97.
6	3.5 Implicit Differentiation 3.6 Related rates	p. 220: 13, 19, 21, 35, 59. p. 226: 13, 15, 19, 33, 37.
7	3.7 Elasticity of Demand 4.1 First Derivative and Graphs	p. 233: 33, 35, 47, 49, 83. p. 252: 11, 15, 17, 29, 33, 51, 85, 97.
8	4.2 Second Derivative and Graphs 4.4 Curve-sketching techniques	p. 269: 9, 15, 17, 21, 25, 29, 39, 49, 99. p. 292: 9, 23, 35, 63, 77.
9	4.5 Absolute Maxima and Minima 4.6 Optimization	p. 302: 11, 13, 17, 23, 31, 43, 61. p. 313: 9, 11, 21, 29.
10	5.1 Antiderivatives 5.2 Integration by substitution	p. 332: 11, 13, 23, 37, 43, 45, 55, 61, 85. p. 344: 11, 15, 19, 21, 47, 63, 77, 79.
11	5.3 Differential Equations; Growth and Decay 5.4 The Definite Integral	p. 354: 11, 15, 53, 63, 77, 81. p. 366: 31, 33, 41, 43, 51, 55.
12	5.5 Fundamental Theorem of Calculus 6.1 Area between Curves	p. 377: 17, 21, 29, 31, 59, 71, 83. p. 395: 31, 35, 41, 45, 49, 51, 55, 83, 85.
13	**REVIEW**	

Academic Integrity and the Academic Code of Conduct

This course is governed by Concordia University's policies on Academic Integrity and the Academic Code of Conduct as set forth in the Undergraduate Calendar and the Graduate Calendar. Students are expected to familiarize themselves with these policies and conduct themselves accordingly. "Concordia University has several resources available to students to better understand and uphold academic integrity. Concordia's website on academic integrity can be found at the following address, which also includes links to each Faculty and the School of Graduate Studies: concordia.ca/students/academic-integrity." *[Undergraduate Calendar, Sec 17.10.2]*

Note: Zoom is included as an institutionally approved technology. This means we have been assured of the privacy protections needed to use freely within the classroom.

Zoom will be used in this course to facilitate learning at a distance. It may be used to record some or all of the lecture and/or other activities in this course. If you wish to ensure that your image is not recorded, speak to your instructor as soon as possible.

Also, please note that you may not share recordings of your classes and that the instructor will only share class recordings for the purpose of course delivery and development. Any other sharing may be in violation of the law and applicable University policies, and may be subject to penalties.

Behaviour
All individuals participating in courses are expected to be professional and constructive throughout the course, including in their communications.

Concordia students are subject to the Code of Rights and Responsibilities which applies both when students are physically and virtually engaged in any University activity, including classes, seminars, meetings, etc. Students engaged in University activities must respect this Code when engaging with any members of the Concordia community, including faculty, staff, and students, whether such interactions are verbal or in writing, face to face or online/virtual. Failing to comply with the Code may result in charges and sanctions, as outlined in the Code.

Intellectual Property
Content belonging to instructors shared in online courses, including, but not limited to, online lectures, course notes, and video recordings of classes remain the intellectual property of the faculty member. It may not be distributed, published or broadcast, in whole or in part, without the express permission of the faculty member. Students are also forbidden to use their own means of recording any elements of an online class or lecture without express permission of the instructor. Any unauthorized sharing of course content may constitute a breach of the Academic Code of Conduct and/or the Code of Rights and Responsibilities. As specified in the Policy on Intellectual Property, the University does not claim any ownership of or interest in any student IP. All university members retain copyright over their work.

Extraordinary circumstances
In the event of extraordinary circumstances and pursuant to the Academic Regulations the University may modify the delivery, content, structure, forum, location and/or evaluation scheme. In the event of such extraordinary circumstances, students will be informed of the changes.