Department of Mathematics & Statistics
Concordia University



MATH 206: Algebra & Functions (Summer 2026)

Instructor:	Dr. N. Ben Ghorbel
Email Address:	noomen.benghorbel@concordia.ca
Lectures:	Tuesdays & Thursdays, 10:15-13:00
Office Hours:	Your professor will announce their office hours during which they will also be available to give a reasonable amount of help. Note, however, that if you missed a class, it is not reasonable to expect your professor to cover the missed material for you.
Important:	Students should get the above information from their instructor and from the course Moodle site. The instructor is the person to contact should there be any questions about the course.
Placement Test:	This course is recommended to Psychology students as preparation for their statistics courses. Math 200 or some previous exposure to Algebra is assumed in this course. For this reason, a placement test to help you determine if you are ready for MATH 206 is included at the end of this outline. Please take it seriously and consult your instructor or an academic advisor if in doubt.
Course Website:	Moodle

Textbook

C*ollege Algebra,* 12th Edition, by Michael Sullivan, Pearson Education, Inc.

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.

Tutorials

The material on this course requires a lot of practice and a strong background in arithmetic and algebra. The Department has therefore organized special tutorial sessions to review required topics in arithmetic and algebra and to practice the course material. The tutorials are conducted every week to provide additional support to students. Students are strongly encouraged to participate and be active in these problem-solving sessions. Tutorials are an important resource to help students succeed in this course. You will find on the Moodle site all the information regarding location and dates for these tutorials.

Math Help Centre

A Math Help Centre staffed by graduate students is available. It is a drop-in service, and you can ask questions regarding the course material and background mathematics. The schedule of its operation will be posted in the Department and on the Department webpage https://www.concordia.ca/artsci/math-stats/services.html#academic-support.

MyLab Math

Every student who buys a textbook will also receive an access code to an online system called **MyLab Math**. Once they have registered for **MyLab Math**, students can download the Pearson e-text 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 **MyLab Math** account, please refer to the footnote* on page 2.

Assignments

Students are expected to submit assignments online using **MyLab Math**. Late assignments **will not** be accepted. Assignments contribute 10% 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.

Calculators

Only calculators approved by the Department (with a sticker attached as proof of approval) are permitted for the class test and final examination. For a list of Approved calculators see:
https://www.concordia.ca/artsci/math-stats/services/advising/calculators.html

Midterm Test

There will be one **midterm test** in Class #7. The test will be 90 minutes long and will be based on the material of all previous classes (Lectures 1-6). The midterm text contributes up to 30% of your final grade **(see the Grading Scheme below**). **The midterm test will be held during lecture time.**

There is no make-up or alternate midterm test. For students who are unable to write the midterm test (for ANY reason), the final exam weight will be elevated automatically to 90% (as per the Grading Scheme below). It is strongly recommended, however, that students prepare themselves for, and do take the midterm test because:

- The midterm test may contribute 30% to your grade, so it may help elevate the grade received in the course; and
- The midterm test is an important opportunity to get timely feedback on your progress in the course.

Final Exam

The final examination will be three hours long and will cover all the material in the course.

PLEASE NOTE: Students are responsible for finding out the date and time of the final exam once the schedule is posted by the Examinations Office. Any conflicts or problems with the scheduling of the final exam must be reported directly to the Examinations Office, **not** to your instructo**r**. It is the Department's policy and the Examination Office's policy **that students are to be available until the end of the final exam period. Conflicts due to travel plans will not be accommodated.**

Grading Scheme

The final grade will be based, in all cases, on the ***higher*** of the two options:
(a) 10% for the assignments, 30% for the midterm test, 60% for the final exam.
(b) 10% for the assignments, 90% 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 **MyLab Math** account, you might be able to get your account extended. **Please try to register for MyLab Math as per the instructions**. Use the same username and password that you used in the previous semester.
PLEASE NOTE: **MyLab Math** ACCESS IS NOT TRANSFERRABLE BETWEEN PRODUCTS. (E.g. MATH 206 and MATH 208. DO NOT use the same product so the access is not transferrable). If you had access in the past and are asked for an access code then choose the 14-day free trial and contact our Pearson representative at molly.armstrong1@pearson.com with the following information:

- Your full name, email address, Pearson username, and Concordia student ID number.
- The name of the course, section, instructor name and the term you are currently registered in (e.g. MATH 206/Sec. AA – Summer 2026)

The following schedule of topics is approximative.

Class #	Sections		Supplementary Problems
1	R4	Polynomials	27, 33, 37, 49, 57, 61, 71, 73, 75, 87, 95, 99
	R5	Factoring Polynomials	17, 19, 27, 29, 35, 41, 49, 53, 71, 75, 83, 91, 95
	R7	Algebraic Expressions	7, 9, 13, 19, 27, 39, 49, 65, 69
	R8	n^{th} Roots, Rational Exponents	9, 15, 18, 29, 31, 45, 48, 49, 59, 69
2	1.1	Linear Equations	17, 19, 25, 29, 37, 41, 47, 77, 81
	1.2	Quadratic Equations	9, 17, 33, 36, 37, 42, 43, 49, 55, 65, 79, 89
	1.4	Radical Equations, Equation Quadratic in Form Factorable Equations	8, 11, 17, 21, 33, 41, 45, 49, 55, 65, 73, 77
	1.5	Solving Inequalities	55, 57, 61, 63, 69, 81, 99
3	1.6	Equations and Inequalities involving Absolute Value	7, 11, 25, 29, 35, 37, 41, 47
	1.7	Problem Solving	23, 25, 31, 34, 35, 45
	2.1	Distance and Midpoint	21, 24, 31, 37, 40, 57
	2.2	Graphs of Equations, Intercepts, Symmetry	17, 23, 25, 41, 43, 45, 51, 53, 56, 61, 64
4	2.3	Lines	15, 21, 25, 39, 41, 49, 52, 62, 72, 78
	2.4	Circles	14, 17, 22, 25, 29, 35, 39
	3.1	Functions	27, 29, 31, 37, 47, 54, 57, 63, 70, 87, 89, 93
	3.2	Graphs of Function	14, 23, 27, 35
5	3.3	Even and Odd Functions	33, 34, 39, 41, 42
	3.4	Library of Functions	18, 19, 21, 23
	3.5	Graphing Techniques, Transformations	19, 21, 23, 25, 29, 53, 59
	3.6	Mathematical Models	5, 10, 13, 23
6	4.1	Linear Functions	29, 31, 39, 49
	4.3	Quadratic Functions	19, 21, 37, 41, 44
	4.4	Quadratic Models	8, 9, 14, 17
	4.5	Inequalities involving Quadratic Functions	3, 6, 7, 11, 15, 21, 25
7	**MIDTERM TEST** (includes the material of the Lectures 1-6)		
7	5.1	Polynomial Functions	17, 19, 21, 25, 27
	5.3	Properties of Rational Functions	11, 14, 21, 27, 29, 37, 42, 44, 47
8	5.4	Graph of Rational Function	7, 10, 17, 20
	5.5	Polynomial and Rational Inequalities Composit	3, 6, 8, 13, 18, 22, 24, 26, 31
	6.1	Functions	14, 15, 17, 23, 25, 31, 39
	6.2	One-to-One and Inverse Functions	33, 35, 50, 51, 59, 61, 65, 75, 90
9	6.3	Exponential Functions	13, 17, 19, 38, 41, 51, 53, 60, 62, 64, 66, 75, 77
	6.4	Logarithmic Functions	10, 13, 19, 23, 27, 29, 31, 37, 43, 46, 77, 82, 91, 93, 97, 101, 103, 111, 119, 133
	6.5	Properties of Logarithms	7, 10, 14, 15, 19, 31, 33, 36, 39, 41, 53, 55, 62, 81, 83, 87
10	6.6	Logarithmic and Exponential Equations	6, 8, 25, 27, 33, 37, 42, 47, 51, 55
	6.7	Compound Interest	5, 7, 13, 16, 21, 25, 32, 36, 39, 41, 46, 50
	6.8	Exponential Growth and Decay Models	2, 4, 7, 9, 11
11	8.1	Systems of Linear Equations	17, 20, 21, 23, 26, 30, 32, 37, 55, 58, 62
	8.6	Systems of Non-Linear Equations	5, 9, 16, 26, 34, 41, 46, 71, 73, 87
12	**Review**		

Student Services

You may wish to access the many services available to you as a Concordia student. An overview of these resources can be found here: https://www.concordia.ca/students/services.html

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: https://www.concordia.ca/conduct/academic-integrity.html" *[Undergraduate Calendar, Sec 17.10.2]*

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.

Use of Concordia email

Your Concordia email is the official channel for all university communications, as required by the university's Policy on Concordia email accounts for students and employees. Please use your Concordia email for all communication related to this course and check it regularly so you don't miss important information. Learn more about how to access your Concordia email.

As a student, you are expected to follow the email policy and to use your Concordia email in a respectful and responsible manner. The policy helps ensure that communication across the university is secure, reliable, and consistent.

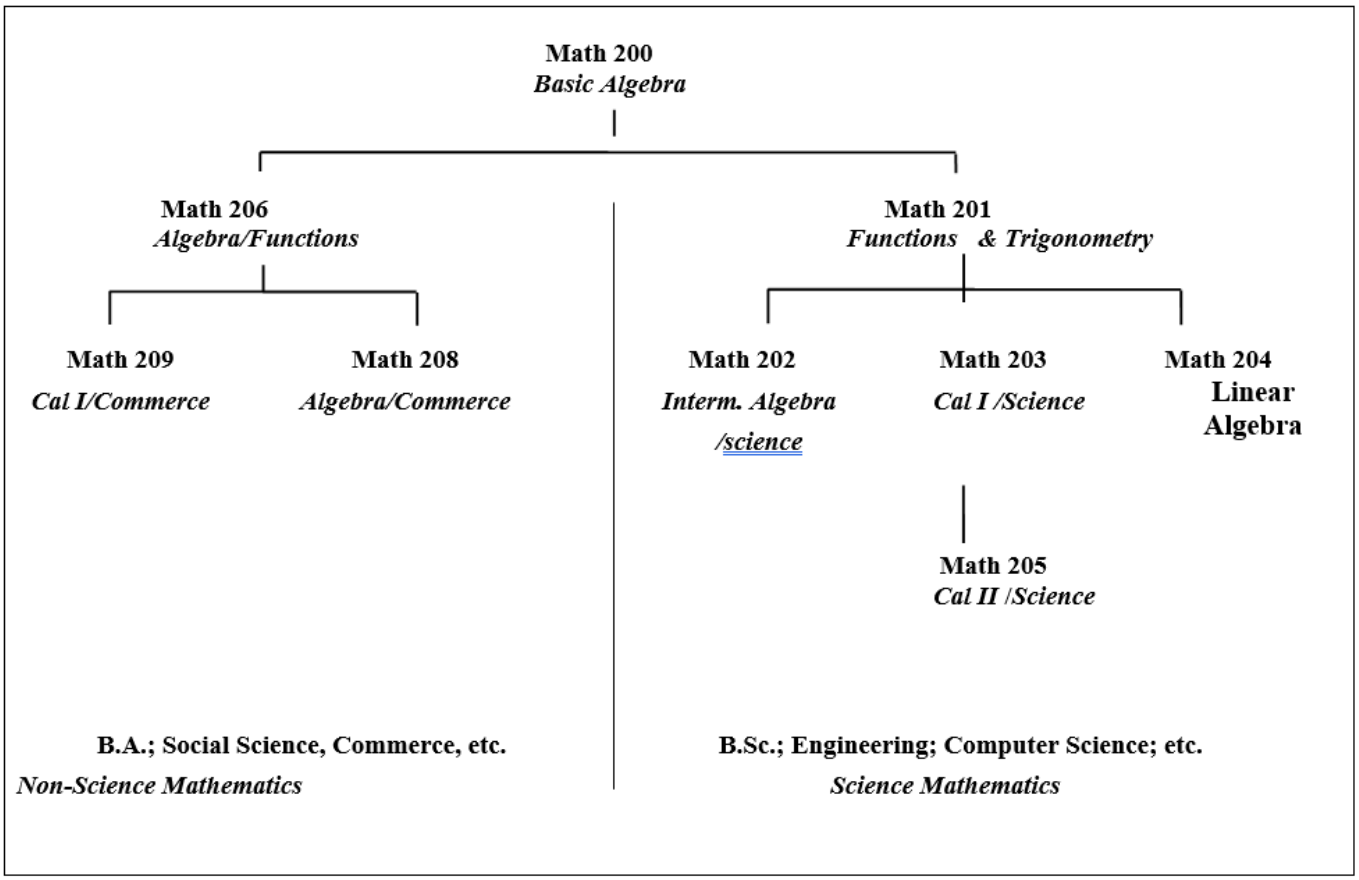
Extraordinary circumstances

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 change.

Choosing Between Math 200 and Math 206

If the last math course you took was at the high school level (Quebec), and more than five years have passed since, you should probably register for Math 200. If you are still unsure of your level, read on.

Math Courses at Concordia



A self-administered test to help you decide between Math 200 and Math 206, follows. Give yourself about 20 or 30 minutes to complete the test. Be honest with yourself, since registering in the wrong course may cost you money and result in a poor grade. Remember that all university level courses usually demand quite a bit of your time. Students in Math 206 will find they will not have time once the course begins to review material that they are expected to know before they enter the course.

Dropping a course: If you find yourself "out of your depth" and decide to drop the course, you must drop the course on your My CU Account at https://hub.concordia.ca/students/account.html before the published deadline. ***If you just stop going to class without formally discontinuing the course, you will receive an F grade for the course.***

MATH 206 Self-Test
(One Mark for each correct answer)

Simplify (write as a single number) 1) $3^2 - 2^3$

2) $\dfrac{6-4(6-4)}{2}$

Solve for x: 3) $\dfrac{3}{2x-1} = \dfrac{7}{3x+1}$

4) $3x + 10 = 4$

Expand (multiply out): 5) $(a-b)^2$

Factor: 6) $x^2 - 16$

7) $x^2 + 5x + 6$

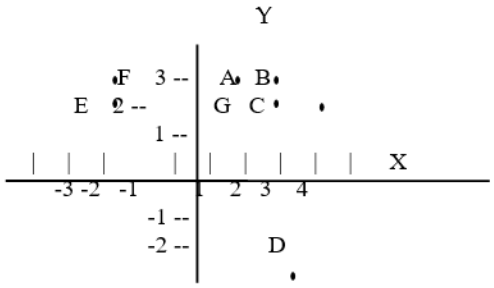
Substitute $a = 1, b = 1,$ in the following equations in order to determine whether or not the statement is true or false:

8) $\dfrac{1}{a} + \dfrac{1}{b} = \dfrac{2}{a+b}$

9) $\sqrt{a+b} = \sqrt{a} + \sqrt{b}$

Give the missing step or steps: 10) $\dfrac{a^2+a}{a+1} = ? = a$

11) Locate the points (3,2) and (-2,2) on the plane below:



12) Write an algebraic expression for: Twice x is equal to 3 less than half x.

Scoring: 6 or less = Math 200; 7-8 = see an advisor; 9 or better = Math 206.

Answers:

1) 1 **2)** -1 **3)** 2 **4)** -2 **5)** $a^2 - 2ab + b^2$ **6)** $(x+4)(x-4)$ **7)** $(x+2)(x+3)$ **8)** False, $2 \neq 1$ **9)** False, $\sqrt{2} \neq 2$ **10)** $\dfrac{a(a+1)}{(a+1)} = a\dfrac{(a+1)}{(a+1)}$ **11)** C is (3,2), E is (-2,2) **12)** $2x = \dfrac{x}{2} - 3$