

General Information.

Discipline: Mathematics *Course code:* 201-016-50

Ponderation: 2-3-3 *Credits:* 2²/₃

Number of class hours: 75

Prerequisite:

CST4, CST5 or equivalent, or a failure in TS4 or equivalent

Objective:

Analyze problems by using concepts in algebra and geometry

Your teacher will provide you with contact information, a listing of office hours, and the breakdown of the class mark in your section (see the written supplement to this course outline).

Introduction. This course is designed for students who need to review or relearn basic algebraic concepts and skills. Successful completion of this course will allow you to take 201-015-50 (Algebra and Trigonometry).

Required Text. *Algebra and Functions (Custom Edition)*, by Ron Larson. Available at the college bookstore for about \$127.

Teaching Methods. Classes are primarily lectures with some discussion and problem-solving. Homework normally amounts to about three hours a week. Many of the failures in this course are due to missing classes. You are expected to attend all lectures, to read the textbook, and to do the homework.

Other Resources.

Math Website.

<http://departments.johnabbott.qc.ca/departments/mathematics>

Math Study Area. Located in H-200A and H-200B; the common area is usually open from 8:30 to 17:30 on weekdays as a quiet study space. Computers and printers are available for math-related assignments. It is also possible to borrow course materials when the attendant is present.

Math Help Centre. Located near H-211; teachers are on duty from 9:00 until 16:00 to give math help on a drop-in basis.

Peer Tutoring. Starting on the fifth week of each semester, first year students can be paired with a fellow finishing student for a weekly appointment of tutoring. Ask your teacher for details.

Academic Success Centre. The Academic Success Centre, located in H-117, offers study skills workshops and individual tutoring.

Departmental Attendance Policy. Regular attendance is expected. Missing six classes is grounds for automatic failure in this course. The enforcement of this regulation is up to each individual instructor.

Evaluation Plan. The Final Grade is a combination of the Class Mark and the mark on the Final Exam. The Class Mark will include the student's results from three or more tests (worth at least 75% of the Class Mark), and possibly homework, quizzes and other assignments. The specifics of the Class Mark will be given by your instructor during the first week of classes in an appendix to this outline.

The Final Exam is set by the course committee, which consists of all instructors currently teaching this course, and is marked by each individual instructor.

No calculators will be allowed on the final exam.

The Final Grade will be the better of:

50% Class Mark and 50% Final Exam Mark

or

25% Class Mark and 75% Final Exam Mark

A student *choosing not to write* the Final Exam will receive a failing grade of 50% or their Class Mark, whichever is less.

Students must be available until the end of the final examination period to write exams.

Course Costs. In addition to the cost of the text, the instructor may recommend purchase of a scientific calculator (about \$20).

Calculators are not allowed on the final exam for this course, but students planning to take other math courses should keep in mind that according to math department policy, the only calculator permitted on tests and final exams is SHARP EL-531XG.

Selected Exercises. The exercises listed below should help you practice and learn the material taught in this course; they form a good basis for homework but they don't set a limit on the type of question that may be asked. Your teacher may supplement this list during the semester. Regular work done as the course progresses should make it easier for you to master the course.

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| 1.1 # 11-28, 35-52 | 6.3 # 1-26, 29-36, 43-48 |
| 1.2 # 17-90 | 6.4 # 1-8, 11-22, 31-54, 67-78 |
| 1.3 # 1-52 | 6.5 # 1-54, 67-78 |
| 1.4 # 1-80 | 8.1 # 1-30, 45-48 |
| 1.5 # 1-12, 19-58 | 8.2 # 1-28, 35-38 |
| 2.1 # 37-54, 61-64 | 9.1 # 1-16, 31-40 (square roots only) |
| 2.2 # 5-16, 25-68 | 9.2 # 3-26, 45-78 (square roots only) |
| 2.3 (Instructor's discretion) | 9.3 # 1-34 (square roots only) |
| 2.4 # 1-10, 27-32 | 9.4 # 1-4, 9-80 |
| 3.1 # 15-54 | 9.5 # 1-24, 37-42 (square roots only) |
| 3.2 # 1-42 | 10.1 # 1-28, 45-49, 71-74 |
| 3.3 # 1-34, 37-40, 43-60 | 10.2 # 17-36 |
| 3.4 # 33-44 | 10.3 # 5-16, 27-42 (omit 32, 35, 37, 38) |
| 3.5 # 1-4, 35, 36 | 11.1 # 1-16, 41-46 |
| 4.1 # 1-8, 17-32 | 11.3 # 1, 2, 7-18, 41-44 |
| 4.2 # 1, 2, 7, 8, 13-22 | 11.5 # 1-36 |
| 4.3 # 13-22 | <i>Trigonometry:</i> |
| 4.4 # 1-48 | 1.1 (instructor's discretion) |
| 4.5 # 1-26 | 1.2 (instructor's discretion) |
| 5.1 # 1-52, 79, 80, 83-90 | 1.3 # 5-14, 16, 17, 63-66 |
| 5.2 # 11-24, 27-60, 65-72 | |
| 5.3 # 1-26, 31-40, 43-76 | |
| 6.1 # 13-66 | |
| 6.2 # 1-6, 11-42 | |

OBJECTIVES	STANDARDS
<p>Statement of the Competency Analyze problems by using concepts in algebra and geometry.</p>	<p>Performance Criterion (for the competency as a whole) Use of appropriate terminology</p>
<p>Elements of the Competency</p> <p>1. <i>Manipulate numerical and algebraic expressions</i></p> <p>2. <i>Analyze situations by using real functions.</i></p> <p>3. <i>Solve problems by using equations.</i></p> <p>4. <i>Solve problems by using analytic geometry.</i></p>	<p>Performance Criteria</p> <p>1.1 Correct application of the order of operations 1.2 Facility with fractions: simplification, addition, subtraction, multiplication and division 1.3 Facility with polynomials: addition, subtraction and multiplication 1.4 Appropriate factoring of algebraic expressions (finding the common factor and factoring by grouping, perfect square trinomial, difference of two squares) 1.5 Correct application of the properties of exponents and radicals</p> <p>2.1 Appropriate modelling of the situation 2.2 Appropriate use of the multiplicative parameters 2.3 Correct determination of the properties (domain, range, sign, variation, extrema, x- and y-intercepts) of an exponential, second-degree polynomial or piecewise function 2.4 Accurate interpretation of results</p> <p>3.1 Appropriate modelling of the problem 3.2 Correct application of the methods for solving linear equations in one variable 3.3 Correct application of the methods for solving second-degree equations (factoring and zero product rule, taking square roots, completing the square, quadratic formula) 3.4 Correct application of the methods for solving exponential equations, with or without logarithms (definition and changing bases) 3.5 Correct application of the methods for solving systems of linear equations in two variables 3.6 Correct application of the methods for solving equations containing one radical 3.7 Accurate interpretation of the results</p> <p>4.1 Appropriate modelling of the problem 4.2 Proper use of trigonometric relations in triangles 4.3 Correct determination of the relative position of two straight lines, the equation of a line, the distance between two points and the coordinates of a point of division 4.4 Accurate interpretation of results</p>

College Policies. Article numbers refer to the IPESA (Institutional Policy on the Evaluation of Student Achievement, available at <http://johnabbott.qc.ca/ipesa>). Students are encouraged to consult the IPESA to learn more about their rights and responsibilities.

Changes to Evaluation Plan in Course Outline (Article 4.3). Changes to the evaluation plan, during the semester, require unanimous consent.

Mid-Semester Assessment MSA (Article 3.3). Students will receive an MSA in accordance with College procedures.

Religious Holidays (Article 3.2). Students who wish to observe religious holidays must inform their teacher in writing within the first two weeks of the semester of their intent.

Grade Reviews (Article 3.2, item 19). It is the responsibility of students to keep all assessed material returned to them in the event of a grade review. (The deadline for a Grade Review is 4 weeks after the start of the next regular semester.)

Results of Evaluations (Article 3.3, item 7). Students have the right to receive the results of evaluation, for regular day division courses, within two weeks. For evaluations at the end of the semester/course, the results must be given to the student by the grade submission deadline.

Cheating and Plagiarism (Articles 8.1 & 8.2). Cheating and plagiarism are serious infractions against academic integrity, which is highly valued at the College; they are unacceptable at John Abbott College. Students are expected to conduct themselves accordingly and must be responsible for all of their actions.