



Maths DAE: Mathematics for Engineering Tech

Schedule: M 14:30–16:00 (P208), W 14:30–16:00 (Ho214).

Teacher: Robert Seely. Office H-204; Phone 457-6610, ext. 5865.

Office Hours: MW 13:00–14:30, Th 14:30–15:30, F 12:30–14:00 and/or as posted on my office door.

Web page: <http://www.math.mcgill.ca/rags/jac.html> Email: rags@math.mcgill.ca

Introduction: This course is designed for students not quite ready to handle Mathematical Models I (201-115-AB), usually needing to review or to learn the basic skills in algebra and trigonometry.

Course Objectives: The successful student should be able to acquire a basic vocabulary in mathematics, develop basic skills in manipulating and simplifying algebraic expressions, acquire expertise in solving polynomial equations, linear inequalities, equations involving rational expressions, equations with one radical, and exponential and logarithmic equations, as well as graph basic linear, quadratic, exponential, logarithmic, and trigonometric functions, use Pythagoras' Theorem, and the trigonometric ratios.

Course Content: see over.

Required Texts: Allyn J. Washington, *Basic Technical Mathematics with Calculus*, 7th edition. A scientific (but **not** a graphing) calculator will be needed.

Methodology, Participation: This course meets twice a week for a total of 3 hours. Classes are primarily lectures, with some discussion and problem-solving. All classes are integral parts of this course. Three hours of homework a week is normal. Generally, each class session will introduce a new topic followed by worked examples. Do many examples; the more you do, the better you get. Work on the suggested assignments as soon as possible following the lecture, as the material will be fresher in your mind. This will also give you a chance to get help before real problems develop.

Attendance Policy: Regular attendance is expected. Missing six classes is grounds for automatic failure in this course. Many failures are due to students missing classes.

I will enforce this regulation with some flexibility: I do recommend that you attend all classes, and if you expect to miss a class, please tell me ahead of time if possible. Otherwise, let me know why you missed a class as soon as possible. If you are ill, please bring me a medical note. In any case, *you* are responsible for covering missed classes, regardless of the reasons for missing the classes.

Evaluation Plan: There will be regular quizzes, roughly each week, some longer, some shorter. There will be **no** provision for makeup tests. In total, there will be at least 100 questions, each worth one mark. Their total will make up the final grade. At the end of the course, a student may opt to do a final class test for a bonus 15%, covering the entire course material. This test will be scheduled during the final week of classes.

It is the responsibility of students to keep all assessed material for at least one month past the grade review deadline in the event they would want to request a grade review.

Course Costs: You will already have a copy of the Washington text book for 201-115, so that is not an additional cost. A scientific calculator costs around \$20. A graphing calculator is optional (cost over \$100), but note that it may not be used in tests nor on the final exam.

Cheating and plagiarism: Cheating and plagiarism are unacceptable to John Abbott College. Students are expected to conduct themselves accordingly and must be responsible for all their actions. For more information on Cheating and Plagiarism, students should consult the Institutional Policy on the Evaluation of Student Achievement (IPESA), which is reprinted in the College Calendar or Student Agenda.

Mid-semester Assessment: Students in their first and second semester (Fall 2004 for first semester students; winter 2005 for first and second semester students) have the right to feedback on basic skills in the first weeks of the semester so that they can seek extra help if necessary.

Note to Students: It is the responsibility of students to keep all assessed material for at least one month past the grade review deadline in the event that they would want to request a grade review. Students can learn more about their rights and responsibilities by reading the IPESA.



Other resources: The Math Lab (H-203) functions as a study area as well as a center where students may seek help with their maths courses. It is open 11:00 to 16:00 Mon – Fri, for borrowing course material and for using computers and printers for math assignments. From 9:00 – 11:00 the Math Help Center is located in the Math Lab, and moves to H-222 from 11:00 to 15:00: in either location a teacher will be on duty for help with maths problems. In addition, the Math Tutoring Center is also located in the Math Lab; it is staffed by second-year students, who can arrange weekly appointments for regular tutoring sessions, as well as drop-in sessions. Check the announcements in the department. Finally, the College Learning Center (H-117A) offers student skills classes and individual tutoring.

Course Content:

SECTION	TOPIC	EXERCISES
1.3	Significant Digits	1-10, 25-36
1.7	Addition and subtraction	11-29
1.8	Multiplication	31-51
1.9	Division	1-19
1.10	Solving equations	11-27
2.2	Triangles	1-20
Linear Equations		
5.1	Linear equations	
5.2	Graphs	1-32
5.3	2 Equations in 2 variables graphically	1-28
Trigonometry		
4.1	Angles	17-23
4.2	Trig functions	17-23
4.3	Values of trig functions	13-31
4.4	Right triangles	5-23
8.1	Signs of trig functions	1-11
8.2	General trig functions	27-35
8.3	Radians	9-56
8.4	Arc	1-25
Quadratics		
7.1	Solve by factoring	1-36
7.3	Quadratic Formula	1-28
7.4	Graphs	1-16
Exponentials and Logs		
13.1	Basics	1-40
13.2	Graphs	1-16