

**Dawson College**  
**Functions and Trigonometry**  
**201-009-50-S02**  
**Winter 2009**

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**Website:** <http://www.obeymath.org>

The website contains the solutions to the quizzes, tests and additional examples. It also has tests and solutions from previous courses.

**Term Work:** (*worth 60% of final grade*):

4 Class Tests\* worth a total of 40% on:

Test 1 **Friday, February 13th**

Test 2 **Friday, March 6th**

Test 3 **Tuesday, April 7th**

Test 4 **Friday, May 8th**

Quizzes\*\* worth a total of 20% on:

every Friday except on test days

\* Each class test is an hour and quarter long.

\*\* Each quiz is 15 minutes long. The contents of the quiz is taken directly from the assigned exercises from the previous lectures.

**Important:** There will be no make-up tests or quizzes. If a valid medical note is presented the weight of the quiz or test will be transferred to the weight of the final examination.

Dawson College  
Mathematics Department

Course Outline for  
Functions & Trigonometry  
201-009-50 / 912-015-94

**Pondération:** 3-2-3

**Prerequisite:** High School Algebra, Math 007, or equivalent.

**Objectives:** To review some important concepts of **algebra** and to ensure competency in proper algebraic manipulations. To introduce the concept of **function**. To ensure competency in the notation, properties and operations of functions in general, and of **linear, quadratic, exponential** and **logarithmic functions** in particular. To introduce the **trigonometric functions** and to ensure competency in interpreting their properties and applications.

**Manual:** **Functions and Trigonometry** by George McArthur  
(available in bookstore).

**Reference:** College Algebra and Trigonometry (3<sup>rd</sup> Edition)  
by Lial, Hornsby and Schneider.

**Calculator:** A scientific calculator, which has no text storage or graphing capabilities, is required for class tests and the final examination.

**Methodology:** Lectures, tutorials and problem sessions.

**Evaluation:** Term work = 60% of final grade.  
Final Examination = 40% of final grade.

**Standard of Performance:** In order to pass this course the student must obtain a final grade of at least 60%.

**Term Work:** The term work will consist of a minimum of 4½ hours of tests/quizzes, plus any other homework or class work that may be assigned.

**Final Exam:** The Final Exam will be a supervised, comprehensive examination held during the final examination period (there are **no** exemptions). No student-prepared information sheets will be permitted. No text-storage calculators will be permitted.

**Literacy:** Problem solving is an essential component of this course. Students will be expected to analyze problems stated in words, to present their solutions logically and coherently, and to display their answers in a form corresponding to the statement of the problem, including appropriate units of measurement. Marks will be deducted for work which is inadequate in these respects, even though the answers may be numerically correct.

**Religious Holidays:** Students who wish to observe religious holidays must inform each of their teachers in writing within the first two weeks of each semester of their intent to observe the holiday so that alternative arrangements convenient to both the student and the teacher can be made at the earliest opportunity. The written notice must be given even when the exact date of the holiday is not known until later. Students who make such arrangements will not be required to attend classes or take examinations on the designated days, nor be penalized for their absence. It must be emphasized, however, that this College policy should not be interpreted to mean that a student can receive credit for work not performed. It is the student's responsibility to fulfill the requirements of the alternative arrangement.

## **Policy on Cheating and Plagiarism**

**Cheating in Examinations, Tests, and Quizzes:** Cheating includes any dishonest or deceptive practice relative to formal final examinations, in-class tests, or quizzes. Such cheating is discoverable during or after the exercise in the evaluation process by the instructor. Such cheating includes, but is not limited to

- a. copying or attempting to copy another's work.
- b. obtaining or attempting to obtain unauthorized assistance of any kind.
- c. providing or attempting to provide unauthorized assistance of any kind.
- d. using or possessing any unauthorized material or instruments which can be used as information storage and retrieval devices.
- e. taking an examination, test, or quiz for someone else.
- f. having someone take an examination, test, or quiz in one's place.

**Unauthorized Communication:** Unauthorized communication of any kind during an examination, test, or quiz is forbidden and subject to the same penalties as cheating.

**Plagiarism on Assignments and the Comprehensive Assessment:** Plagiarism is the presentation or submission by a student of another person's assignments or Comprehensive Assessment as his or her own. Students who permit their work to be copied are considered to be as guilty as the plagiarizer.

**Obligation of the Teacher:** Every instance of cheating or plagiarism leading to a resolution that impacts on a student's grade must be reported by the teacher, with explanation, in writing to the Chair of Mathematics and to the Dean of Pre-University Studies. A copy of this report must also be given to the student.

**Penalties:** Cheating and plagiarism are considered extremely serious academic offences. Action in response to an incident of cheating and plagiarism is within the authority of the teacher. Penalties may range from zero on a test, to failure of the course, to suspension or expulsion from the college.

### **Students' Obligations:**

- (a) Students have an obligation to remain informed about what takes place in their regularly scheduled classes. Absence from class does not excuse students from this responsibility.
- (b) Students have an obligation to arrive on time and to remain for the duration of scheduled classes and activities.
- (c) Students have an obligation to write tests and final examinations at the times scheduled by the teacher or the College. Students have an obligation to inform themselves of, and respect, College examination procedures.
- (d) Students have an obligation to show respectful behavior and appropriate classroom deportment. Should a student be disruptive and/or disrespectful, the teacher has the right to exclude the disruptive student from learning activities (classes) and may refer the case to the Director of Student Services under the Student Code of Conduct.
- (e) Cellular phones, pagers and musical listening devices have the effect of disturbing the teacher and other students. All these devices must be turned off and put away. Students who do not observe these rules will be asked to leave the classroom.
- (f) Cell phones must also be put away. Text messaging is not allowed in class.

**Math Tutorial Room (7B.1):** Volunteer math teachers are available for help in room 7B.1 from 10:00 to 16:00, Monday through Friday, and from 17:00 to 18:00, Monday through Thursday.

### **Course Content:** (The numbers of weeks given below are approximate.)

#### **Review of Algebra:** (4 weeks)

Integer Exponents in Algebra (1-30)  
Polynomials I (1-7)  
Polynomials II (1-32)  
Factoring (1-9)  
Rational Expressions (Fractions) (1-8)  
Roots and Radicals (1-13)  
Solving Linear Equations (1-26)  
Solving Quadratic Equations by Factoring (1-2)  
Solving Quadratic Equations (continued) (1-3)  
Solving Equations Containing Fractions (1-4)

#### **Functions:** (6 weeks)

The Rectangular Coordinate System (1-63)  
Introduction to Functions (1-77)  
Linear Functions (1-6)  
The Slope and Equations of a Line (1-8)  
Quadratic Functions (1-3)  
Piece-Wise Defined Functions (1-14)  
Operations on Functions and Composite Functions (9-28)  
Inverse Functions (1-6)  
Exponential and Logarithmic Functions (1-78)  
Logarithms (1-115)

## Trigonometry (5 weeks)

Angles in Trigonometry (1-11)

The Trigonometric Functions (1-4)

Solving Right Triangles (1-43)

Solving Oblique Triangles (optional)

The Special Angles and Reference Angles (1-3)

Radian Measures in Trigonometry (1-15)

Graphs of the Sine and Cosine Functions (1-3)

Trigonometric Identities (1-41)

Solving Trigonometric Equations (1a-1f, 1o-1q, 2a-2d, 2f-2L)

The Inverse Trigonometric Functions (1-2)

**Note:** Exercises not included above are optional.