

I. COURSE DESCRIPTION:

This course provides students with the ability to apply mathematics in their daily lives. Students will learn how to reason and interpret with information involving mathematics and numbers. Students will develop skills in problem solving and analysis, which can be applied to personal decision making and to the evaluation of concerns in society.

II. LEARNING OUTCOMES**A. Learning Outcomes:**

Upon successful completion of this course, students will demonstrate the ability to:

1. Represent mathematical information symbolically, visually, numerically, and verbally.
2. Interpret mathematical models such as formulas, graphs, and tables, and draw inferences from them.
3. Use arithmetical, algebraic, and statistical methods to solve problems.
4. Think critically about quantitative issues that confront them in their personal lives and as citizens.
5. Recognize that mathematical and statistical methods have limits.

**II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE
(Continued):**

1. Represent mathematical information symbolically, visually, numerically, and verbally.

Potential elements of the performance:

- Show the relationship of a quantity with respect to another by using words, a table, an equation, a picture, or a graph.
 - Apply the most appropriate representation method for the situation.
2. Interpret mathematical models such as formulas, graphs, and tables, and draw inferences from them.

Potential elements of the performance:

- Manipulate and analyze formulas of linear and nonlinear relations.
- Use a variety of types of graphs and tables to obtain information.
- Predict some aspect of the behaviour of a particular phenomenon or process.

3. Use arithmetical, algebraic, and statistical methods to solve problems.

Potential elements of the performance:

- Apply guidelines for problem solving to specific situations.
 - Formulate basic algebraic, graphical, or statistical solutions to problems.
4. Think critically about quantitative issues that confront them in their personal lives and as citizens.

Potential elements of the performance:

- Examine and evaluate scientific claims.
 - Analyze the validity, accuracy, and/or conclusions of the statistics in the news media, opinion polls, or reports of research.
5. Recognize that mathematical and statistical methods have limits.

Potential elements of the performance:

- Recognize that some scientific claims may be biased or inaccurate.
- Give examples of the possible inaccuracy of estimates in measurement due to biases and/or random and systematic errors.
- Examine methods used with respect to their appropriateness for the given situation.

III. TOPICS:

1. Math in our Lives
2. Consumer Math
3. Statistics
4. Math in the Media

IV. LEARNING ACTIVITIES

TOPIC #	TOPIC DESCRIPTION	REFERENCES ASSIGNMENTS
1	Math in our Lives	
1.1	Numbers: Number symbols and written text versions. Numbers as written in the English language	Convert between standard numbers, Roman numerals, and textual versions of numbers
1.2	Time and the conventions of written time	Convert 12-hour clock to 24-hour clock. Exercise, with use of calculator, of basic arithmetic operations with time
1.3	Review of exact and approximate numbers. Measurement and systems of measurement	Exercises in rounding and the conversion of measurements within a system and between a system. Calculating area and volume from measurements and rounding

IV. LEARNING ACTIVITIES (continued):

TOPIC #	TOPIC DESCRIPTION	REFERENCES ASSIGNMENTS
1.4	Currency and currency exchange	How to convert currency Web sites for currency exchange
1.5	Personal budget	Introduce spreadsheets and use to prepare a budget for the academic year
1.6	Arithmetic in symbols (Algebra)	Solve equations with one unknown
1.7	Formulas	Rearrange formulas manually and with Maple
1.8	Basic construction and interpretation of graphs	Create some simple graphs
2.0	Consumer Math	
2.1	Percent and interest rates	Use Excel for a set of exercises
2.2	Straight interest	
2.3	Compound interest and Effective Annual Rate (E.A.R.)	
2.4	Amortization of a loan, student loans	
2.5	Getting a car in Ontario: lease or purchase? Taxes on a car	Exercise in evaluating the differences
2.6	Annuities and the RRSP and how method of contribution affects its value	
	Test #1 based on Topics 1 and 2	
3	Statistics	
3.1	Data and what it represents	Use of Excel and Minitab
3.2	Sampling or taking a census of a population. Basic limitations. What is a population?	
3.3	Basic concepts of probability	Handout
3.4	Means and standard deviation	Application as cut-off values
3.5	Linear regression and graphing of results. What r^2 is	How to create a graph from a scattered set of points. Evaluate the reliability of the graph
4	Math in the Media	
4.1	An informed person reads newspapers and follows the broadcast media	Find three print examples of improper use of numbers in any form. Analyze the errors
	Test #2 based on topics 3 and 4	

V. REQUIRED RESOURCES / TEXTS / MATERIALS:

There is no required textbook for this course. There will be a variety of handouts distributed in class. Students should make use of reference material, such as, library books, newspapers, magazines, the Internet, radio, television, and any other media available.

A scientific calculator is required. The Sharp EL-531R is recommended.

VI. EVALUATION PROCESS/GRADING SYSTEM:**MAJOR ASSIGNMENTS AND TESTS**

Evaluation Tool	Weight	Due Date
In-Class and Homework Assignments	60%	Ongoing throughout the semester
Test # 1	20%	
Test #2	20%	
Total	100%	

ATTENDANCE

It is your responsibility to attend all classes during the semester. Research indicates there is a high correlation between attendance and student success.

If you are absent from class, it is your responsibility to find out what work was covered and assigned and to complete this work before the next class. Your absence indicates your acceptance of this responsibility.

Unexcused absence from a test may result in a mark of zero ("0"). Absence may be excused on compassionate grounds such as verified illness or bereavement. On return from an excused absence, you should ask your instructor to schedule the writing of a make-up test. Failure to do so will be considered as an unexcused absence.

METHOD OF ASSESSMENT (GRADING METHOD)

A+	Consistently outstanding	(90% - 100%)
A	Outstanding Achievement	(80% - 89%)
B	Consistently above average achievement	(70% - 79%)
C	Satisfactory or acceptable achievement in all areas subject to assessment	(60% - 69%)
X or R	A temporary grade, limited to situations with extenuating circumstances, giving a student additional time to complete course requirements (See below)	(50% - 59%)
R	Repeat - The student has not achieved the objectives of the course, and the course must be repeated	(0% - 59%)
CR	Credit exemption	

The method of calculating your weighted average will be defined by your instructor. Since grades are based upon averages, it follows that good marks in some tests can compensate for a failing mark in another test.

VI. EVALUATION PROCESS/GRADING SYSTEM (continued):**Make-Up Test (if applicable)**

An "X" grade may be assigned at the end of the regular semester if you have met **ALL** of the following criteria:

- an overall average between 50% and 59% was achieved
- at least 50% of the tests were passed
- at least 80% of the scheduled classes were attended
- at least 80% of quizzes and assignments were submitted
- all of the topic tests were written

If you are assigned an "X" grade, you may convert it to a "C" grade by writing a make-up test on topics agreed to by the instructor. This test will be available at the time agreed to by your instructor.

At the end of the regular term, it is your responsibility to obtain your results from your instructor and, in the event of an "X" grade, to inquire when the make-up test will be available.

The score you receive on this make-up test will replace your original test score and be used to re-calculate your weighted average. If the re-calculated average is 60% or greater, a "C" grade will be assigned. If the re-calculated average is 59% or less, an "R" grade will be assigned.

"R" and "X" Grades at the end of the Semester

If an "X" grade is not cleared by the specified date, it will become an "R" grade. Except for extenuating circumstances, an "X" grade in Math will not be carried into the next semester.

"R" Grades during the Semester

A student with a failing grade and poor attendance (less than 80% attendance) may be given an "R" at any time during the semester.

VII. SPECIAL NOTES:

Students with special needs (e.g. physical limitations, visual impairments, hearing impairments, learning disabilities), are encouraged to discuss required accommodations with the professor and/or contact the Special Needs Office.

VII. SPECIAL NOTES (continued):

Advanced Standing

Students who have completed an equivalent post-secondary course must bring relevant documents to the Coordinator, Mathematics Department:

- a copy of course outline
- a copy of the transcript verifying successful completion of the equivalent course

Note: A copy of the transcript must be on file in the Registrar's Office.

VIII. PRIOR LEARNING ASSESSMENT:

Students who wish to apply for advanced credit in the course should consult the instructor or the Prior Learning Assessment Office (E2203).