



ORIGINAL COURSE IMPLEMENTATION DATE: September 2008  
 REVISED COURSE IMPLEMENTATION DATE: September 2017  
 COURSE TO BE REVIEWED: (six years after UEC approval) December 2022  
 Course outline form version: 09/15/14

## OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

Note: The University reserves the right to amend course outlines as needed without notice.

<b>Course Code and Number:</b> MATH 124	<b>Number of Credits:</b> 4 <a href="#">Course credit policy (105)</a>																
<b>Course Full Title:</b> Finite Math with Applications in the Information Sciences <b>Course Short Title (if title exceeds 30 characters):</b> Finite Math																	
<b>Faculty:</b> Faculty of Science	<b>Department (or program if no department):</b> Mathematics & Statistics																
<b>Calendar Description:</b>  This class is intended to reinforce skills in algebra, graphing, and problem solving, and to provide an introduction to finite mathematical structures, algorithms, and techniques important in discrete math, statistics, and computer science. Whenever possible, concepts are motivated by information sciences applications.																	
<b>Prerequisites (or NONE):</b>	One of the following: (C or better in one of Precalculus 11, Foundations of Mathematics 11, Principles of Mathematics 11, or MATH 085) or (one of Principles of Mathematics 12, Foundations of Mathematics 12, Precalculus 12, or MATH 094).																
<b>Corequisites (if applicable, or NONE):</b>																	
<b>Pre/corequisites (if applicable, or NONE):</b>																	
<b>Equivalent Courses (cannot be taken for additional credit)</b> Former course code/number: Cross-listed with: Equivalent course(s): <i>Note: Equivalent course(s) should be included in the calendar description by way of a note that students with credit for the equivalent course(s) cannot take this course for further credit.</i>	<b>Transfer Credit</b> Transfer credit already exists: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No  Transfer credit requested (OReg to submit to BCCAT): <input type="checkbox"/> Yes <input type="checkbox"/> No (if yes, fill in transfer credit form)  Resubmit revised outline for articulation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No  To find out how this course transfers, see <a href="http://bctransferguide.ca">bctransferguide.ca</a> .																
<b>Total Hours: 60</b> <b>Typical structure of instructional hours:</b> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr><td>Lecture hours</td><td style="text-align: center;">60</td></tr> <tr><td>Seminars/tutorials/workshops</td><td></td></tr> <tr><td>Laboratory hours</td><td></td></tr> <tr><td>Field experience hours</td><td></td></tr> <tr><td>Experiential (practicum, internship, etc.)</td><td></td></tr> <tr><td>Online learning activities</td><td></td></tr> <tr><td>Other contact hours:</td><td></td></tr> <tr><td style="text-align: right;"><b>Total</b></td><td style="text-align: center;"><b>60</b></td></tr> </table>	Lecture hours	60	Seminars/tutorials/workshops		Laboratory hours		Field experience hours		Experiential (practicum, internship, etc.)		Online learning activities		Other contact hours:		<b>Total</b>	<b>60</b>	<b>Special Topics</b> Will the course be offered with different topics? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No  If yes, different lettered courses may be taken for credit: <input type="checkbox"/> No <input type="checkbox"/> Yes, repeat(s) <input type="checkbox"/> Yes, no limit  <i>Note: The specific topic will be recorded when offered.</i>
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Other contact hours:																	
<b>Total</b>	<b>60</b>																
<b>Department / Program Head or Director:</b> Ian Affleck																	
<b>Faculty Council approval</b>																	
<b>Campus-Wide Consultation (CWC)</b>																	
<b>Dean/Associate VP:</b> Lucy Lee																	
<b>Undergraduate Education Committee (UEC) approval</b>																	
<b>Date approved:</b>	October 2016																
<b>Date approved:</b>	November 4, 2016																
<b>Date of posting:</b>	n/a																
<b>Date approved:</b>	November 4, 2016																
<b>Date of meeting:</b>	December 16, 2016																

**Learning Outcomes**

Upon successful completion of this course, students will be able to:

- solve basic algebraic equations in one variable
- determine and compare asymptotic behaviour of power, polynomial, exponential, root, and logarithmic functions
- solve equations and inequalities involving power, polynomial, exponential, root, and logarithmic functions with the aid of graphing technology
- solve linear inequalities in two variables and interpret the solution set graphically
- construct systems of linear equations from a variety of applications
- apply row reduction algorithms to solve small linear systems by hand
- perform basic arithmetic operations with matrices
- use technology to compute the inverse of a matrix
- formulate linear programming restriction sets in a variety of applications
- solve small linear programming problems by graphical methods
- apply Venn diagrams and basic principles of counting to solve elementary counting problems
- apply basic principles of probability and counting to calculate the probabilities of events in simple applications

**Prior Learning Assessment and Recognition (PLAR)**

Yes     No, PLAR cannot be awarded for this course because

**Typical Instructional Methods (guest lecturers, presentations, online instruction, field trips, etc.; may vary at department's discretion)**

Lectures may be interspersed with problem sessions. Graphing calculators will be used. In addition, mathematical software may be used.

**Grading system:** Letter Grades:  Credit/No Credit:  Labs to be scheduled independent of lecture hours: Yes  No

**NOTE: The following sections may vary by instructor. Please see course syllabus available from the instructor.**

**Typical Text(s) and Resource Materials (if more space is required, download Supplemental Texts and Resource Materials form)**

Author (surname, initials)	Title (article, book, journal, etc.)	Current ed.	Publisher	Year
1. Lial, Hungerford, Holcomb	Finite Mathematics with Applications, 11 <sup>th</sup> edition	<input type="checkbox"/>	Pearson	2015
2. Lial, Greenwell, Ritchey	Finite Mathematics, 11 <sup>th</sup> edition	<input type="checkbox"/>	Pearson	2016
3. Goldstein, Schneider, Siegel	Finite Mathematics & Its Applications, 11 <sup>th</sup> edition	<input type="checkbox"/>	Pearson	2014
4. Beecher, Penna, Ellenbogen and Bittinger	Precalculus: Graphs and Models, 4 <sup>th</sup> edition	<input type="checkbox"/>	Pearson	2009
5.		<input type="checkbox"/>		

**Required Additional Supplies and Materials (software, hardware, tools, specialized clothing, etc.)**

A graphing calculator will be required. Note that more than one text is usually required to cover all of the learning outcomes.

**Typical Evaluation Methods and Weighting**

Final exam:	40%	Assignments:	10%	Midterm exam:	30%	Practicum:	%
Quizzes/tests:	20%	Lab work:	%	Field experience:	%	Shop work:	%
Other:	%	Other:	%	Other:	%	Total:	100%

**Details (if necessary):** Students must obtain at least 40% on the final exam to pass the course.

**Typical Course Content and Topics**

1. Algebra and Equations:  
The real numbers; polynomials and factoring; rational expressions; exponents and radicals; linear and quadratic equations
2. Functions and Graphs:  
Linear, quadratic, polynomial, exponential, and logarithmic functions; graphs, end behaviour and applications of the above functions; running time of algorithms
3. Linear Algebra:  
Systems of linear equations; solutions by row reduction (by hand and using technology); matrix arithmetic and multiplication; matrix inverses; applications in information sciences
4. Linear Programming:  
Graphing linear inequalities in two variables; solutions by graphical methods; applications
5. Introduction to Set Theory:  
Sets; union, intersection and complement; Venn diagrams
6. Introduction to Counting and Probability:  
The multiplication principle; permutations and combinations; probability and odds; basic rules of probability