



ORIGINAL COURSE IMPLEMENTATION DATE: September 2017

REVISED COURSE IMPLEMENTATION DATE:

COURSE TO BE REVIEWED: (six years after UEC approval) March 2023

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 093	<b>Number of Credits:</b> 1.5 <a href="#">Course credit policy (105)</a>																
<b>Course Full Title:</b> Trigonometry and Conics																	
<b>Course Short Title (if title exceeds 30 characters):</b>																	
<b>Faculty:</b> Faculty of Access and Continuing Education	<b>Department (or program if no department):</b> Upgrading and University Preparation																
<b>Calendar Description:</b> <p>Supplements MATH 092 to provide students with pre-calculus 12 requirements. Content includes trigonometric and inverse trigonometric expressions, equations, and functions, as well as conics, and systems of nonlinear equations.</p>																	
<b>Prerequisites (or NONE):</b>	One of the following: MATH 092, MATH 094, MATH 096, MATH 140, Principles of Mathematics 12, Pre-calculus 12, or Upgrading and University Preparation assessment.																
<b>Corequisites (if applicable, or NONE):</b>	NONE																
<b>Pre/corequisites (if applicable, or NONE):</b>	NONE																
<b>Equivalent Courses (cannot be taken for additional credit)</b> Former course code/number: <b>NONE</b> Cross-listed with: <b>NONE</b> Equivalent course(s): <b>NONE</b> <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 type="checkbox"/> Yes <input checked="" type="checkbox"/> No Transfer credit requested (OReg to submit to BCCAT): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (if yes, fill in transfer credit form) Resubmit revised outline for articulation: <input type="checkbox"/> Yes <input type="checkbox"/> No To find out how this course transfers, see <a href="http://bctransferguide.ca">bctransferguide.ca</a> .																
<b>Total Hours: 45</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;">30</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: individual and small group work (in class)</td><td style="text-align: center;">15</td></tr> <tr><td style="text-align: right;"><b>Total</b></td><td style="text-align: center;"><b>45</b></td></tr> </table>	Lecture hours	30	Seminars/tutorials/workshops		Laboratory hours		Field experience hours		Experiential (practicum, internship, etc.)		Online learning activities		Other contact hours: individual and small group work (in class)	15	<b>Total</b>	<b>45</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: individual and small group work (in class)	15																
<b>Total</b>	<b>45</b>																
<b>Maximum enrolment (for information only):</b> 24 <b>Expected frequency of course offerings (every semester, annually, every other year, etc.):</b> every semester																	
<b>Department / Program Head or Director:</b> Greg St. Hilaire	<b>Date approved:</b> January 4, 2017																
<b>Faculty Council approval</b>	<b>Date approved:</b> February 10, 2017																
<b>Campus-Wide Consultation (CWC)</b>	<b>Date of posting:</b> March 17, 2017																
<b>Dean/Associate VP:</b> Susan Brigden	<b>Date approved:</b> February 10, 2017																
<b>Undergraduate Education Committee (UEC) approval</b>	<b>Date of meeting:</b> March 24, 2017																

**Learning Outcomes**

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

1. Use trigonometric concepts to solve applied problems
2. Use radian measures
3. Solve trigonometric equations
4. Graph circular functions and their inverses
5. Recognize, analyse, and graph conic equations
6. Solve nonlinear systems of equations
7. Use technology to enhance understanding of MATH 093 topics

After completion of MATH 092 and MATH 093, students will meet outcomes identified for Provincial Level – Algebra and Trigonometry in the 2015-2016 Adult Basic Education Articulation Guide available at [http://www2.gov.bc.ca/assets/gov/education/post-secondary-education/adult-education/2016-17\\_abe\\_guide.pdf](http://www2.gov.bc.ca/assets/gov/education/post-secondary-education/adult-education/2016-17_abe_guide.pdf) (accessed February 2017).

**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, online instruction, and problem solving sessions.

**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. Aufman, Barker, Nation	College Algebra and Trigonometry W/ Webassign	<input checked="" type="checkbox"/>	Brooks/Cole	2011
2.		<input type="checkbox"/>		
3.		<input type="checkbox"/>		
4.		<input type="checkbox"/>		
5.		<input type="checkbox"/>		

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

Graphing calculator

**Typical Evaluation Methods and Weighting**

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

**Details (if necessary):**

**Typical Course Content and Topics**

1. Radian measure
2. Solving applied problems involving angular speed
3. Solving applied problems involving the Law of Sines and Cosines (optional)
4. Properties and graphs of trigonometric functions
5. Graphing techniques (transformations of graphs)
6. Verifying trigonometric identities (sum, difference, double-, half-angle identities)
7. Properties and graphs of inverse trigonometric functions
8. Solving trigonometric equations
9. Properties and graphs of conic equations (circle, ellipse, parabola, hyperbola)
10. Solving nonlinear systems of equations