CAPILANO UNIVERSITY

COURSE OUTLINE

TERM: Fall 2013	**COURSE NO.**: BMTH 048
INSTRUCTOR:	**COURSE NAME**: Advanced Foundations Mathematics 2
OFFICE:	**SECTION NO.**: **COURSE CREDITS:** 1.0

COURSE FORMAT: Self-paced; 1.5 hours in class and 1.5 hours other mode of delivery such as tutorial in the ABE Learning Lab or on-line using Moodle. This is a self-paced course; students may complete this course in less or more than 15 weeks.

PREREQUISITE: BMTH 047

LEARNING OUTCOMES: Upon successfully completing this course students should be able to:

- Calculate the population standard deviation of a data set.
- Explain, using examples, the properties of a normal curve, including the mean, median, mode, standard deviation, symmetry and area under the curve.
- Determine if a data set approximates a normal distribution, and explain the reasoning.
- Explain, using examples that represent multiple perspectives, the application of standard deviation for making decisions in situations such as warranties, insurance or opinion polls.
- Determine the **z** -score for a given value in a normally distributed data set.
- Solve a contextual problem that involves normal distribution.
- Explain, using examples, how confidence levels, margin of error and confidence intervals may vary depending on the size of the random sample.
- Make inferences about a population from sample data, using given confidence intervals, and explain the reasoning.
- Model and solve problems that involve systems of linear inequalities in two variables.
- Graph the boundary line between two half planes for each inequality in a system of linear
- inequalities, and justify the choice of solid or broken lines.
- Determine and explain the solution region that satisfies a linear inequality, using a test point when given a boundary line.
- Determine, graphically, the solution region for a system of linear inequalities, and verify the solution.
- Explain, using examples, the significance of the shaded region in the graphical solution of a system of linear inequalities.
- Demonstrate an understanding of the characteristics
- of quadratic functions, including:
  - vertex
  - intercepts
  - domain and range
  - axis of symmetry.
- Determine, with or without technology, the intercepts of the graph of a quadratic function.
- Determine, by factoring, the roots of a quadratic equation, and verify by substitution.
- Determine, using the quadratic formula, the roots of a quadratic equation.

- Explain the relationships among the roots of an equation, the zeros of the corresponding
- function, and the **x** -intercepts of the graph of the function.
- Explain, using examples, why the graph of a quadratic function may have zero, one or two **x** -intercepts.
- Express a quadratic equation in factored form, using the zeros of a corresponding function or the **x** -intercepts of its graph.
- Determine, with or without technology, the coordinates of the vertex of the graph of a quadratic function.
- Determine the equation of the axis of symmetry of the graph of a quadratic function, given the **x** -intercepts of the graph.
- Determine the coordinates of the vertex of the graph of a quadratic function, given the equation of the function and the axis of symmetry, and determine if the **y** -coordinate of the vertex is a maximum or a minimum.
- Determine the domain and range of a quadratic function.
- Sketch the graph of a quadratic function.
- Solve a contextual problem that involves the characteristics of a quadratic function.

REQUIRED TEXT: TBA

COURSE CONTENT:

Unit 1	Statistics.
Unit 2	Systems of linear equations.
Unit 3	Quadratic relations.

EVALUATION PROFILE:

Student evaluation will be based upon the learning outcomes for ABE Advanced Level, which is articulated in the *Adult Basic Education British Columbia's Public Post-Secondary Institution Articulation Handbook*.

Credit will be determined by evaluation as follows:

Unit 1	20%	Statistics.
Unit 2	20%	Systems of linear equations.
Unit 3	20%	Quadratic relations.
Quizzes	20%	
Final Exam	20%	
Total	100%	

GRADING PROFILE:

Grade	Numerical Range	Grade Point Equivalent
A+	90-100	4.33
A	85-89	4.00
A-	80-84	3.67
B+	77-79	3.33
B	73-76	3.00
B-	70-72	2.67
C+	67-69	2.33
C	63-66	2.00
C-	60-62	1.67
D	50-59	1.00
F	49 and below	0.00

Students not completing course work by the end of the term will receive a grade of NC (no credit). A grade will only be assigned after all course content has been evaluated.

OPERATIONAL DETAILS:

Examinations: Students may rewrite any examination without penalty.

University Policies: Capilano University has policies on Academic Appeals (including appeal of final grade), Student Conduct, Cheating and Plagiarism, Academic Probation and other educational issues. These and other policies are available on the University website.

Attendance: Students who will be absent for any reason should leave a voice or email message for their instructor ***prior*** to the start of class. ABE department policy is to place students attending less than 75% of classes in a subject on a "non-priority list". Students on this list register last (after all other students have registered).

Cheating/Plagiarism: All forms of cheating including plagiarism are serious offences. The instructor has the right to assign a "0" on the assignment or a grade of "NC" on the course. A second offence in any course may result in expulsion from the program.

Computer use policies: The misuse of a computer system (such as unauthorized access to other computer accounts or unauthorized use of system software) is not only unfair to other students but can result, at the instructor's discretion, in suspension of the offender's computer access in a course, which may result in an "NC" grade. Repeated offences may result in a permanent revoking of all computer privileges.

Emergency Procedures: Please read the emergency procedures posted on the wall of the classroom.