

## **Foundations of Analytical and Quantitative Reasoning**

Foundations: Numeracy X99

Section: D100

Term: 2012 Summer

Instructor: Cameron Morland

### Discussion Topics: Calendar Description:

Designed for students who need to upgrade their mathematical background in preparation for SFU Q courses. Also recommended for students who wish to refresh skills after several years away from mathematics. An in-depth look at what mathematics is; mathematical reasoning, problem solving and math study skills. Review of fundamental topics and concepts of mathematics and their real-world applications. This course aims to develop students' math study skills, confidence in their quantitative abilities, and to learn how understanding mathematics is both one of the keys to mastering other disciplines, and useful in everyday situations. Units from this course do not count towards the 120 units required for an SFU degree; however, the course grade is included in the calculation of the student's cumulative GPA.

### Course Outline:

The course uses a problem solving approach to teach mathematical thinking and math study skills, and to introduce and review mathematical concepts. Students work in small groups under the guidance of instructors. They learn how to read and analyze mathematics problems, how to solve them, and how to present their solutions.

In particular, the following mathematics concepts are reviewed:

1. Patterns and numbers in mathematics; whole numbers, integers, fractions, decimals.
2. Factoring, factors, prime numbers.
3. Exponents, factoring and simplifying algebraic expressions.
4. Mathematical language, notation, order of operations, the distributive law.
5. Fractions, percentages, ratios and proportions.
6. Linear equations and systems of equations.
7. Inequalities and systems of inequalities.
8. Introduction to graphing and the graphical representation of data.
9. Graphing linear equations and systems of equations.
10. Functions, graphing functions.

Grading: Homework - 15%

Quizzes - 15%

Midterms - 30%

Final Exam - 40%

Required Texts: Title: Beginning Algebra: Connecting Concepts through Applications

Author(s): Clark & Anfinson

Publisher: Nelson Education

ISBN: 9780534419387

Recommended Texts:

Materials/Supplies:

Prerequisite/Corequisite: Prerequisite: Students who have taken, have received transfer credit for, or are currently taking MATH 150, 151, 154 or 157 may not take FAN X99 for credit without the permission from the Department of Mathematics.

Notes: THE INSTRUCTOR RESERVES THE RIGHT TO CHANGE ANY OF THE ABOVE INFORMATION.

## **Foundations of Analytical and Quantitative Reasoning**

Students should be aware that they have certain rights to confidentiality concerning the return of course papers and the posting of marks. Please pay careful attention to the options discussed in class at the beginning of the semester.

This outline is derived from a course outline repository database that was maintained by SFU Student Services and the University's IT Services Department. The database was retired in 2014 and the data migrated to SFU Archives in 2015.