



SURVEY OF MATHEMATICS – EXPLORING SOUTH AFRICA MATH 1010

Credit Hours: 3

Catalog Course Description:

Topics include critical thinking skills, problem solving, logic, geometry, measurement, consumer math, probability and statistics.

How Program Site Will Be Incorporated into the Course:

South Africa presents a great cultural environment for students to learn about mathematics and its applications in everyday life. This program site provides a wonderful opportunity for service learning. We would like to visit schools and share methods to teach the mathematical concepts included in this course through the use of manipulatives. South Africa uses the metric system so that our students will gain a better understanding of this system of measurement. We would also like to participate in the typical excursions that make South Africa such a rich cultural experience. Students will be encouraged to recognize mathematics such as geometry in these visits.

Prerequisites: High school algebra I, algebra II and ACT math score of at least 19, or Transitional Studies math requirements or equivalent math placement score

Textbook/Online and Other Requirements:

- The student must purchase an Access Code for MyMathLab by registering online at <http://www.pearsonmylab.com>. A course ID will be provided. This access includes an e-book by Blitzer, Robert; **Thinking Mathematically** 5th Edition, Prentice Hall, 2011. A hard copy of the textbook may be purchased in the bookstore.
- A basic scientific calculator is required.

Topic Basis:

Critical thinking skills, reasoning, problem solving,

Set concepts

Basic Financial Concepts

Measurement, Metric System

Geometry

Statistics

Probability

II. Course Objectives:

- A. Recognize and translate verbal and written situations into a problem solving format.
- B. Identify, understand, and appreciate geometrical concepts reflected in the South African environment.
- C. Understand and identify the use of the metric system of measurement in the South African culture.

- D. Enhance the students' knowledge of the basic principles of probability and statistics and applying these principles to solve real world problems.
- E. Guide students to master the critical thinking skills necessary for success in the student's life and discipline and to interpret logic with items such as sets and Venn diagrams.
- F. Enhance the effective use of mathematics to solve personal everyday financial problems and develop techniques to assist others in this knowledge.

III. Instructional Processes:

Students will:

1. Complete assigned homework, quizzes and exams in MyMathLab.
2. Take part in all cultural, historical, and educational opportunities such as site visits, excursions and walking tours.
3. Visit schools and complete journal assignments related to the visit.
4. Work in teams to discuss and analyze applications of mathematical topics covered that are recognized in the South African environment.
5. Develop oral and research skills by preparing and leading a presentation to a group of students on a mathematical concept included in this course.
6. Internalize the work ethic by being punctual to all classes and field trips, completing assignments of time, cooperating with the teacher and other classmates, contributing to class discussions, and acting in a professional manner while in class and on tour.

IV. Expectations for Student Performance:

Upon successful completion of this course, the student should be able to:

1. Use set notation and Venn diagrams and apply these concepts by teaching South African students using basic manipulatives.
2. Utilize inductive and deductive reasoning as well as assisting students in utilizing inductive and deductive reasoning.
3. Draw conclusions as a result of laws of logic and assist students in drawing conclusions as a result of using laws of logic.
4. Design and understand problem solving models and assist students in translating verbal and written situations into problems solving models.
5. Identify and explain major concepts of geometry and its applications in the South African environment.
6. Understand the metric system and recognize its usage in South Africa. Work with students in solving measurement problems using the metric system units.
7. Understand basic financial concepts and work with students in applications of these concepts.
8. Understand basic probability concepts and work with students in applications of these concepts through the use of manipulatives.
9. Understand basic statistics concepts and design projects to work with students in applications of these concepts.

V. Evaluation:

A. Evaluation Methods:

- Homework, quizzes, and unit exams will be completed online in MyMathLab. Deadlines will be posted for this work to be submitted.
- A comprehensive written final exam will be completed during classroom time.
- A journal of field trip experiences will be submitted at the end of the course. Journals will be evaluated on detail provided, completeness, quality and mathematical accuracy.

B. Final grades will be computed as follows:

10%	Homework
15%	Quizzes
15%	Journal
60%	Exams

C. Grading Scale:

93 – 100	= A
88 – 92	= B+
83 – 87	= B
78 – 82	= C+
70 – 77	= C
60 – 69	= D
Below 60	= F

VI. Policies:

A. Attendance Policy:

Attendance is of utmost importance in study abroad courses. There are no unexcused absences permitted. Multiple unexcused absences are grounds for removal from the program. Being in class on time is also very important. Frequent tardiness will be considered an absence and appropriate action will be taken. Absences due to illness must be reported immediately to the program director.

B. Academic Dishonesty:

Academic misconduct committed either directly or indirectly by an individual or group is subject to disciplinary action. Prohibited activities include but are not limited to the following practices: Cheating, including but not limited to unauthorized assistance from material, people, or devices when taking a test, quiz, or examination; writing papers or reports; solving problems; or completing academic assignments. In addition to other possible disciplinary sanctions that may be imposed as a result of academic misconduct, the instructor has the authority to assign either (1) an F or zero for the assignment or (2) an F for the course.

VII. Instructional Hours:

This class comprises 45 instructional hours, divided between classroom time, site lectures, site visits, and excursions. Please note that because of the time that transportation and site visits require, excursions will extend beyond the usual three hours per day of classroom time.