

**Course Title:** Mathematics for Social Sciences

**Course Code:** ECON 0001

**Course Type:** Core

**Course Level:** I

**Semester:** I & II

**Department:** Economics

**Faculty:** Social Sciences

**Credits:** 0

**Pre-requisites:** None

### **Course Description:**

The course is designed specifically for students who were unsuccessful in the Mathematics Proficiency Test (MPT). In preparation for ECON 1003, the course aims to refresh students' knowledge of CSEC/O Level mathematics as well as address any deficiencies students may have with the material at this level. In particular the course reviews the areas of CSEC/O Level mathematics that are considered to be pre-requisites for ECON 1003. Using a thematic approach and associated worksheets deficient mathematic skills will be addressed. Upon successful completion of this course, the student is eligible to enroll in ECON 1003.

### **Course Rationale:**

A strong background in mathematics is required for success in the University's Economics Programme. Failure to pass the MPT usually indicates math deficiencies associated with the CSEC/O Level mathematics curriculum. To improve a student's successful completion of all required math courses in the Economics Programme, the University implemented ECON 0001 to strengthen math skills in students who failed the MPT.

### **Course Learning Outcomes:**

At the end of this course the successful student will be able to:

1. Apply basic mathematical concepts to practical situations
2. Solve problems in the area of economics, accounting and management by applying the appropriate mix of mathematical concepts and methods

3. Manipulate mathematical symbols and terminology
4. Solve linear, quadratic, polynomial, and power equations
5. Solve linear inequalities
6. Solve a system of simultaneous equations in 2 variables using the Elimination Method
7. Interpret the mathematical concepts, symbols and terminology used in economics, accounting and management

## **Course Content**

This course is organized to engage students in the following particular sets of mathematic skills:

1. Algebraic Expressions: Directed Numbers, Simplification, Substitution, and Cancellation. The application of the four rules to algebraic expressions.
2. Algebraic Fractions: Simplification; Application of the four rules
3. Sets: Definitions; Operation of Union, Intersection and Complement; Number of Elements in a Set
4. Linear Equations; Cross Multiplication; Changing the Subject of the Formula
5. Simple Inequalities; Manipulating Inequalities; Solving Inequalities
6. Simultaneous Equations
7. Factorisation: Common Factors, Grouping, Difference of Two Squares, Perfect Squares
8. Solution of Quadratic Equations using the Factor, Product/Sum & Quadratic Formula Methods
9. Solution of Quadratic Equations using Completion of the Square
10. Functions - Functional Notation, Types of Functions, Power Functions, Inverse Functions
11. The Straight Line – Generic Equation; Slope/gradient, y-Intercept; x-Intercept; finding y-value for a specified x-value, finding x-value for a specified y-value.

**NB.** Word Problems will be incorporated in all of the above

## **Required Resources**

- **Raymond Toolsie**, Mathematics: A Complete Course with CXC Questions Volumes One & Two, Third Edition Caribbean Educational Publishers. 2010.

## Course Calendar

Week	Activity
1	Registration for Sessions
2	Worksheet #1 - Sets; Algebra - Directed Numbers, Simplification
3	Worksheet #2 - Algebra - the Four Rules applied to Algebraic Expressions
4	Worksheet #3 - Algebra – Substitution and Algebraic Fractions
5	Worksheet #4 - Algebra – Linear Equations, Operations, Inequalities
6	Worksheet #5 - Simultaneous Equations
7	Worksheet #6 – Factorization
8	Worksheet #7 - Quadratic Equations, [Sitting of First Internal Exam]
9	Worksheet #8 - Functions
10	Worksheet #9 - Power Functions
11	Worksheet #10 - Changing the Subject of a Formula
12	Worksheet #11 - The Straight Line, [Sitting of Second Internal Exam]
13	Review

## Teaching Strategies

The course will be delivered by way of problem-based learning activities, demonstrations and co-operative learning activities. These strategies will seek to refresh students' knowledge of the course content as well as build students' confidence in the subject matter.

Students will be provided with a minimum of two (2) contact hours weekly

## Course Assessment

Assessment	Learning Outcomes							Weighting %	Assessment Description	Duration
	1	2	3	4	5	6	7			
Internal Exams	✓	✓	✓	✓	✓	✓	✓	26%	In-course assessment	1 hour
Participation*	✓	✓	✓	✓	✓	✓	✓	14%	In-course assessment	
Final Exam	✓	✓	✓	✓	✓	✓	✓	60%	Final Examination	2 hours

\* The Participation Mark will be broken down into (a) Attendance/Punctuality (2%), (b) Weekly Preparation of Worksheets (6%) and (c) Contribution to Class Discussions (6%). The Participation Mark will therefore be a reflection of each student's contribution to these areas over the course of the entire semester.

The **In-course Assessment** is comprised of two Internal Exams and a Participation Mark.

The **Final Examination** at the end of the Semester will be based on the entire course.

The Overall Mark in the course will therefore be a composite of the marks obtained in the coursework and final examination components. The pass mark for this and all courses is 50%.

## **EXPECTATIONS**

As a student enrolled in Mathematics for Social Sciences, your lecturers expect that you will be fully engaged in the traditional classroom, the cooperative learning activities and all relevant activities. Research has shown that students learn best through collaboration and interaction: accordingly, you are encouraged to participate in and complete all worksheets and classroom activities.

## **CLASS ATTENDANCE POLICY**

Regular class attendance is essential. A student who misses a class will be held responsible for the class content and for securing material distributed. Attendance is the responsibility of the student and consequently nonattendance will be recorded. Students would be reminded of the implications of non-responsible attendance.

## **EXAMINATION POLICY**

Students are required to participate in coursework on the prescribed dates. Absence from in-course tests will only be accommodated in extenuating circumstances based on documented evidence of the circumstances. Such documentation must be presented to the Course Lecturer/Tutor no later than the start of the week following the test.

Please review the handbook on *Examination Regulations for First Degrees, Associate Degrees, Diplomas, and Certificates*

[http://sta.uwi.edu/resources/documents/Exam\\_and\\_GPA\\_regulations.pdf](http://sta.uwi.edu/resources/documents/Exam_and_GPA_regulations.pdf).

## **POLICY REGARDING CHEATING**

Academic dishonesty including cheating is not permitted. For more information, read Section V (b) Cheating in the *Examination Regulations for First Degrees, Associate Degrees, Diplomas, and Certificates* [http://sta.uwi.edu/resources/documents/Exam\\_and\\_GPA\\_regulations.pdf](http://sta.uwi.edu/resources/documents/Exam_and_GPA_regulations.pdf).

## **STATEMENT ON DISABILITY PROCEDURE**

The University of the West Indies at St. Augustine is committed to providing an educational environment that is accessible to all students, while maintaining academic standards. In accordance with this policy, students in need of accommodations due to a disability should contact the Academic Advising/Disabilities Liaison Unit (AADLU) for verification and determination as soon as possible after admission to the University, or at the beginning of each semester.

## **NOTES TO STUDENTS**

Registration for lecture sessions will be done online via myeLearning. Please see the news forum of myeLearning for the date and time of this activity.

The Course Lecturers will be available for consultations during specified **Office Hours** and at other times by appointment. Remember to check the times posted on the doors to their offices.

Participation in class discussion and problem solving activities is a critical input to the feedback process within a classroom session. The rules of engagement for these discussions will be defined by the Course Lecturer and/or Tutor at the first lecture and first tutorial respectively.

Under no condition should a student come to a class unprepared to contribute to the class proceedings.

Overall students should invest a minimum of **seven (7) hours per week** apart from lectures, tutorial classes and office hours to this course. This breaks down to one (1) hour per day.