



COURSE OUTLINE

COURSE NAME: Mathematics for Social Sciences 1A

COURSE CODE: MSS111S

COURSE LECTURER DETAILS

SURNAME & INITIALS	OFFICE	TELEPHONE

SHORT COURSE DESCRIPTION:

This course acts as the basis for differentiation and integration processes. Differentiation and integration are core components of Mathematics for Social Sciences 1B (MSS112S), a course that deals extensively with the applications of calculus to economic problems.

COURSE LEARNING OUTCOMES:

By the end of the course, the students should be able to

- Draw and interpret graphs of functions (parabola, hyperbola logarithmic and exponential)
- Obtain the first and higher order derivatives of functions (polynomial, logarithmic and exponential)
- Determine, use and interpret the slope of curvilinear functions of one variable.

ASSESSMENT STRATEGIES:

The assessment will be based on continuous evaluation and end of semester examination. The continuous evaluation is made up of class tests and/or assignments. These will contribute 40% to the final assessment. The end of semester examination is one three-hour paper. This will contribute 60% to the final assessment.

SPECIAL RULES APPLICABLE TO THIS COURSE:

- 1 Two class tests/assignments will be written during the course of the semester. **A candidate scores a zero in a test or assignment not done on schedule.** (See 2 below)
- 2 A supplementary test may be arranged for candidates who, for whatever reason, missed a class test. No candidate will be allowed to write more than one (1) supplementary test.
- 3 To gain entry to the semester examination, a candidate must have obtained a continuous assessment average of NOT less than 50%.
- 4 The semester examination will consist of one three-hour written paper.
- 5 The pass mark for the course is 50% with a sub-minimum of 40% in the semester examination.
- 6 Class tests will be written on the exact dates as will be announced at least one week in advance by the lecturer(s) concerned.

SYLLABUS CONTENT:

1. Review of algebraic expressions **(Week 1)**
Constants, Coefficients, Variables and Parameters
Addition, Subtraction, Multiplication and Division
Symbols of Grouping
Monomials and Polynomials
Factoring of a Quadratic Trinomial
Algebraic Fraction. Irrational Expressions
2. Exponents, Surds & Logarithms **(Week 2)**
Definitions and basic laws
Indicial and logarithmic functions
3. Straight Line Graphs **(Week 3)**
The X-Y Coordinate System
Calculation of point coordinates and plotting points
Reading gradients of straight lines Equation of a Straight Line
4. Graphs of Functions **(Week 4)**
Parabolic and Hyperbolic graphs.
Logarithmic and Exponential Graphs.
5. Derivatives **(Week 5-15)**
The Concept (and meaning) of Limits **(Week 5)**
Differentiation from First Principles **(Week 6)**
Standard Derivatives (polynomial, logarithmic and exponential functions) **(Week 7)**

TEST 1

- Rules of Differentiation (product, quotient, chain, implicit and logarithmic) **(Week 8-9)**
Inverse Function Rule **(Week 10)**
Higher Order Derivatives **(Week 11-12)**
The Slope of a Curvilinear Function of One Variable **(Week 13)**
Applications **(Week 14-15)**

TEST 2

6. Revision & Supplementary Test – see special rule no. 2 **(Week 16-17)**
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Reading List:

Prescribed Textbook:

Basic Mathematics for Economists
M. Rosser
Routledge Pb, UK
ISBN 0-415-08425-3

Recommended Textbook:

Schaum's Outline of Theory and Problems of Mathematics for Economists
E.T Dowling
Schaum's Outline Series, McGraw-Hill Publishing Company
ISBN 0-07-017760-0