



QUANTITATIVE METHODS 2A COURSE OUTLINE

COURSE CODE: QTM211S

NQF Level 5

NQF Credit 13

Learning outcomes:

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

- model real life business problems into a system of linear equations or a system of linear inequalities
- solve systems of linear equations and systems of linear inequalities
- use the graphical method and the simplex method to solve optimization problems
- use calculus to determine the extrema values of business related functions (with special attention on Marginal and Total Functions)

Pre-requisite: Quantitative Methods 1 (QTM112)

Duration and Contact hours:

The duration of the course is one semester. There will be four (4) contact hours per week, making a total of 60 contact hours for a semester of 15 weeks.

Assessment:

The assessment will be based on continuous evaluation and end of semester examination. The continuous evaluation is made up of class tests and assignments. These will contribute 50% to the final assessment. The end of semester examination is one three-hour paper. This will also contribute 50% to the final assessment if a sub minimum score of 40% is obtained in the examination.

Class tests will be written on the exact dates as will be announced well in advance by the lecturer(s) concerned.

Course content:

1. **n-Tuple Vectors**
2. **Matrices and Systems of Linear Equations**
 - 2.1 Solutions by Cramer's Rule
 - 2.2 Solutions by Row-reduction

- 3. **Systems of Linear Inequalities**
- 3.1 Modeling
- 3.2 Solutions by Graphical Method
- 3.3 Solutions by Simplex Method

- 4. **Basic Differential and Integral Calculus**
- 4.1 Derivatives of Common Business-related Functions
- 4.2 Applications of Differentiation
- 4.3 Applications of Integration

READING LIST

Prescribed Textbook:

Mathematical Analysis for Business, Economics, and the life and social sciences
Jagdish C. Arya & Robin W. Lardner
A Simon & Schuster Company Englewood Cliffs,
New Jersey, 07632 (1993)
ISBN 0-13-564345-7

Recommended Material:

Study Guide:
Quantitative Methods 2A Study Guide
By Benson Obabueki (2002)

Recommended Textbooks:

- 1. Business Mathematics with Statistics
Dexter J. Booth and John K. Turner

- 2. Introductory Mathematics for Economics and Business
K. Holden and A.W Pearson

- 3. Introductory Mathematics & Statistics for Business John S. Croucher.

- 4 Mathematical Methods For Business And Economics: Edward T. Dowling, Ph.D. ISSN 0-07-017697-3