School of Mathematics

Course 1S4 — Mathematics for Science students 2000–01
(JF Mathematics as a whole subject within the Natural Science Moderatorships (those not taking Physics). JF Human Genetics. JF Medicinal Chemistry.)

Lecturer: Dr. N. H. Buttimore

Requirements/prerequisites: None

Duration: 24 weeks

Number of lectures per week: 2 lectures per week, plus a tutorial every third week.

Assessment: Assignments will count for ?% of the mark.

End-of-year Examination: Three hour exam. Result is combined with results of 1S1 and 1S3.

Description: Vectors and linear algebra, differential equations, and applications to biological examples.

More detailed outline:

- Vectors, addition, scalar product, cross product, vector equation of a line in 3 dimensions, triple vector product, differentiation. (Anton:13.1-13.6)
- Matrices, systems of linear equations, determinants. (Anton&Rorres: Chapters 1-2)
- Ordinary Differential Equations of first and second order. Linear differential equations with constant coefficients. Nonhomogeneous. (Kreysig: from Chapter 1-2)
- Applications/Examples: TO BE SPECIFIED Radiocative decay.

Main Reference

1. Howard Anton and Chris Rorres, Elementary Linear Algebra applications version, (7th edition) Wiley 1994.

Recommended reference

1. Howard Anton, Calculus: a new horizon (6th edition), Wiley, 1998.

October 19, 2000