

School of Mathematics

Course 2S1 — Mathematics for Science Students

2006-07

(SF Mathematics as a whole subject within the Natural Science Moderatorships)

Lecturer: Dr. O. Constantin

Requirements/prerequisites: Course 1S

Duration: 24 weeks

Number of lectures per week: 3

Assessment: None

End-of-year Examination: One 3-hour annual examination

Description: See <http://www.maths.tcd.ie/~olivia/2S1/> for more detailed information.

- Functions of several variables. Vector calculus. Differential operator and its properties.
Anton (Calculus): Chapter 15.
- Probability and Statistics
Kreysig: from Chapter 22-23 (excluding topics covered in 1S).
- Multiple integrals, change of variables, Jacobians. Line, surface and volume integrals.
Gauss's theorem and Stokes' theorem.
Anton (Calculus): Chapters 16–17.

Textbooks:

Essential References

1. Howard Anton, Calculus: a new horizon , published by Wiley.
2. Erwin Kreyszig, Advanced Engineering Mathematics, published by Wiley.

Recommended references

1. S. Wolfram, Mathematica a system for doing mathematics by computer, Addison-Wesley, published by Wolfram Media and Cambridge University Press.
2. G. B. Thomas & R.L. Finney, Calculus and Analytic Geometry, published by Addison Wesley.

November 8, 2006