Engineering mathematics 1 EE106

Introductory analysis and calculus

C. Nash
Mathematical Physics Department
National University of Ireland
Maynooth

cnash@thphys.nuim.ie

Preface

This is a set of notes which supplement my lectures on for course EE106 which is about elementary analyisis and calculus. They are reasonably self contained but should be read *as well as* other written material. There are so many books covering this material that I shall recommend just four. These are:

1. Booth D. J. and Stroud K. A., *Engineering mathematics*, Palgrave MacMillan, (2007).

2. Kreyszig E., *Advanced engineering mathematics*, Wiley, (2010).

3. Hobson M. P. and Riley K. F., *Essential mathematical methods for the physical sciences*, Cambridge University Press, (2011).

4. Spivak M., *Calculus*, Cambridge University Press, (2006).

The first of these four would be an adequate book for this course. The second assumes that differentiation and integration are already known starts with differential equations; it then moves on through many other more advanced topics most of which will be covered in a second year engineering course.

The third book takes a slightly wider viewpoint but covers much the same material as the second. Lastly the fourth book is almost exclusively concerned with calculus rather than its applications. It is very well written and is also rigorous; this latter point means that it is more suitable for a mathematics course than an engineering course, nevertheless it is still worth having a look at in the library. One should always try to read as widely as one can.

Charles Nash