

MAS205 Complex Variables 2005-2006

Some Notes on Prerequisites

The course description specifies Calculus II (and, by extension, Calculus I) as a prerequisite for this course. This means that it is a good idea to have a look at some sections of your first year modules and, if necessary, do a little revision on your own.

In particular, you have already heard about

Complex Numbers

in Calculus I. While we will start from scratch, now would be a good time to have a look at some notes, e.g.

<http://www.maths.qmul.ac.uk/~reza/MAS101/COMP-WEB.pdf>

Complex Variables is essentially

Calculus using Complex Numbers

instead of real numbers. Therefore you will again encounter pretty much all you have seen in Calculus I, and most of Calculus II.

Things to remember from Calculus I: inequalities, limits, continuity versus differentiability of functions, differentiation and integration, convergence of series, power series, and Taylor series. Technical rules for calculation (chain rule, l'Hospital's rule) will also be handy.

Things to remember from Calculus II: real-valued functions on \mathbb{R}^2 , joint continuity, partial derivatives, and joint differentiability. It will be helpful if you can picture properties of functions of two real variables, e.g. Chapter 2 in

http://www.maths.qmul.ac.uk/~bjc/MAS102/MAS102_notes.pdf

The more you remember of Calculus I/II, the easier it will be for you to succeed in this course. Please have a good look at your old notes during the first week of this term, and don't forget to refer to them later on if necessary.