MA2051 — Mathematical Analysis I

Lecturer: Dr. Stephen Wills
Office: 1.60, Western Gateway Building
email: s.wills@ucc.ie
WWW: http://tinyurl.ie/ma2051

This will be a forum for announcements, in particular relating to the homeworks and in-class test, and also provide copies of the exercise sheets for download, along with other useful resources.

Module Objective: To present elementary classical analysis in a concrete setting, emphasising specific techniques important to classical analysis and its applications.

Module Content: Topology of Euclidean space; continuous mappings; Riemann integration; uniform convergence.

Lectures: Monday 3, WGB 107; Wednesday 9, FSB 322.

Tutorials: There will be a weekly tutorial starting in the second week of term. The proposed time is Monday 2 in WDL PDT. In these I will go through some of the exercises that I’ll hand out in class, and also make you do some work; learning mathematics is not a passive activity.

Assessment: Total Marks 100: End of Year Written Examination 75 marks; Continuous Assessment 25 marks.

Continuous Assessment: 25% of your final mark will come from a combination of two homeworks (worth 5% each) and an in-class test (worth 15%). The likely hand-in dates for the homeworks are Wednesday 17 October and Wednesday 7 November, and the test will probably take place on Wednesday 28 November. Failure to hand in work or take the test will give a mark of 0 unless accompanied by a reasonable excuse (requiring medical cert or similar), in which case special arrangements will come into force.

Note: the continuous assessment mark is carried forward to the Autumn exam, should you end up the unfortunate position of having to sit it.

Reading: The main guiding text for the course is Principles of mathematical analysis by W. Rudin, as used for MA1054 last year, but we will not follow it slavishly. There are many other books that give accessible introductions to analysis in the library. Particular examples include

- Guide to analysis, F.M. Hart.
- Mathematical analysis: a straightforward approach, K.G. Binmore.
- The elements of real analysis, R.G. Bartle.
- Mathematical analysis, M.D. Hatton.
- Basic elements of real analysis, M.H. Protter (A first course in real analysis by Murray and Protter is an expanded version of this book).
- Introduction to metric and topological spaces, W.A. Sutherland.