

Lecture 1

F17CC Introduction to university maths

- Resources.
- Assessment.
- Contents of course.
- Tutorials.

Resources

- VISION.

Make sure that this course is visible.

If not, email me so I can enrol you

- Download a copy of my book.
Please do not share (copyright reasons).

- Go to course website
[This can be accessed directly, avoiding
VISION, from my home page].

Download syllabus

Download Exercises (not solutions).

I WILL NOT PROVIDE HARDCOPIES
OF EXERCISES — YOU WILL NEED
THEM FOR THE TUTORIALS

Assessment

- Two tests, each worth 10%,
taken during a lecture slot.
See course website for when.

- One exam worth 80%.
THERE ARE NO PAST PAPERS.
This is maths. dept. policy.

[We are here to learn Maths, not
play exam games.]

However, if you know how to do all the
exercises you will be fine.

Contents of Course

1. Combinatorics.
2. Polynomials.
3. Matrices.
4. Vectors.

The connections between these topics will become clearer as we progress.

All these topics will be needed for later courses.

Although you might regard this course as about algebra, it contains ideas important across all of Maths including calculus and probability theory.

It is supposed to be a bridge between School and University Mathematics.

Tutorials

- These begin next week (week 2).
- There is a tutorial timetable on the course website.
- Tutorials are important. You must attend. Registers will be taken.

ANY QUESTIONS?

1. Combinatorics

This subject is about counting. It is therefore particularly important in Probability theory

Goal : Develop formulae for counting permutations and combinations

This will require: Counting principles (to help to count).

Therefore we need: set notation to formulate these counting principles precisely.

We therefore begin with set notation

Aside Hallmarks (i.e. distinguishing features) of university Maths:

- Precision. We always need

to be clear and unambiguous.

To help us, we develop notation systems and formulate definitions.

- Proofs. How do you know what you are doing is correct? A proof shows that a formula works or a method does what is advertised. Any rational entity can check proofs for themselves.
[Maths is not about opinions]