WEEK 1 (SEP 11-17)

There will be no office hours the first week. Office hours and tutorials begin from the second week of classes.

The plan for the week is to cover sections 2.1, 2.2, 2.3, and 2.4 from the text *Applied combinatorics*, Keller and Trotter.

Here is what you need to know or brush up on.

- The definition of $n!$ for a non-negative integer n.
- The definition of a binomial coefficients of the form $\binom{n}{k}$, for $0 \leq k \leq n$. To cut to the chase, the definition is
$$\binom{n}{k} \frac{n!}{k!(n-k)!}.$$
- You should have a reasonable understanding of sets, their unions, intersections, and the idea of a map $f\colon A \to B$ between sets A and B. You should also look up what it means for f to be one-to-one and what it means for it to be onto.

Proposition 2.6 from §2.2 and Proposition 2.9 from §2.3 are foundational for the course. If you have time, look at the statements of these Propositions before the lectures begin. They will be covered in the lectures, but being familiar with the statements might help you understand the lectures better.