



UCL Undergraduate Mathematics Colloquium

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Date: **11th March 2026**

Location: **221 Hong Kong Alumni Room, Bentham House**

A Prime Topology: The Golomb Space

Speaker: **Evaristo Nogales** (UCL) , Time: **4.00-4.30pm**

Abstract: This talk introduces an unusual way of looking at the natural numbers, not through algebra, but through topology. We focus on the Golomb space, a topology on the positive integers where open sets reflect basic arithmetic ideas such as coprimality and prime factors. We motivate how this topology arises by studying its continuous functions and seeing how strongly continuity restricts what a function can do.

We then explore some key properties of the Golomb space and compare it with the Furstenberg topology, another example of an arithmetic topology. Using these spaces, we give a topological proof that there must be infinitely many prime numbers. The goal is to show how simple topological ideas can capture deep facts about primes in a surprising and intuitive way.

Stability for the General Turan Problem

Speaker: **Daya Nidhan Singh** (UCL), Time: **4.35-5.30pm**

Abstract: One of the most basic questions of graph theory is what kind of graphs maximise the number of copies of some subgraph, whilst not containing some other!

Here, we will be exploring a class of solutions, and examining a proof that shows all solutions close to the optimum share common structure!