With a very stretchy square piece of paper, you can make a torus: Glue opposite sides of the square together to make a tube and then stretch and bend the tube to bring the two circular ends together. Since the square can be built out of two triangles, you’ve made a torus out of two triangles, or in other words, you have triangulated the torus. In one sense, this is the only way to triangulate the torus with two triangles. In another sense, there are infinitely many ways to triangulate the torus, and these triangulations are related in a complex and interesting way. We’ll talk about the structure of triangulations of the torus by two triangles, using very elementary number theory, topology, and combinatorics.

If any of this sounds mysterious, don’t worry. We’ll build everything up from the beginning to make this talk accessible to all undergraduates.