LMS Undergraduate Summer School

Swansea University, 12–23 July 2021

Mini-course

Sarah Whitehouse (Sheffield)

Combinatorics of Young tableaux and symmetric groups

Abstract
The course will start with basic definitions of partitions, Young diagrams and Young tableaux. The hook and determinant formulas for the number of standard Young tableaux of a given shape will be presented, probably with sketch proofs. I will explain the relationship between tableaux and permutations and sketch the relevance to representations of the symmetric group. Throughout there will be a strong emphasis on examples and calculations, rather than abstract representation theory. Many examples will be worked out in detail for small n, with exercises leading the students through further examples.