Advanced Lie Algebras
Dr Matthew Westaway, University of Bath

This course will explore a variety of topics within the theory of Lie algebras which one would not normally have seen in an introductory course on the subject. The course will focus particularly on the following areas:

- Universal enveloping algebras and the Poincaré-Birkhoff-Witt Theorem
- Representation theory of semisimple Lie algebras over C, including the classification of finite-dimensional simple modules
- Harish-Chandra's Theorem describing the centre of the universal enveloping algebra
- A brief introduction to category O and the Kazhdan-Lusztig conjecture
- Lie algebras over fields of positive characteristic

Course notes will be available here in due course.