

MATH-625(1) **Working Group in Algebraic Groups, I (2019)**

Testerman Donna

| Cursus      | Sem. | Type |
|-------------|------|------|
| Mathematics |      | Obl. |

|                            |                   |
|----------------------------|-------------------|
| Language of teaching       | English           |
| Credits                    | 2                 |
| Session                    |                   |
| Exam                       | Oral presentation |
| Workload                   | 60h               |
| <b>Hours</b>               | <b>28</b>         |
| Courses                    | 14                |
| Exercises                  | 14                |
| <b>Number of positions</b> | <b>10</b>         |

### Frequency

Every year

### Remark

Next time: Fall 2018

### Summary

The topics addressed in this course are the structure theory of reductive algebraic groups, their associated Lie algebras, the related finite groups of Lie type, and the representation theory of all of these objects.

### Content

We start with the basic structure theory of reductive algebraic groups and proceed to study:

- their representations, the subgroup structure, conjugacy classes, structural results on their Lie algebras,
- the related finite groups of Lie type, generation problems.
- the working group is based on advanced textbooks and journal articles.

### Keywords

semisimple, reductive, algebraic groups, Lie algebras

### Learning Prerequisites

#### Important concepts to start the course

Advanced abstract algebra and group theory, representation theory, preferably some knowledge of Lie theory.