

MATH-697

**Positive characteristic algebraic geometry (2018)**

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Cursus	Sem.	Type
Mathematics		Obl.

Language of teaching	English
Credits	3
Session	
Exam	Oral presentation
Workload	90h
<b>Hours</b>	<b>42</b>
Courses	28
Exercises	14
<b>Number of positions</b>	<b>15</b>

**Remark**

Next time: Fall 2018

**Summary**

This is a course on the geometry of algebraic varieties defined over fields of positive characteristic.

**Content**

The goal of the course is to learn the most possible techniques in positive characteristic algebraic geometry. Examples of such techniques are: techniques connected to Kodaira vanishing and non-vanishing, such as torsor- and semi-positivity-method, bend and break, Keel's lifting statement, Forbenius trace method, generic vanishing in positive characteristic. Students will learn as much of these techniques as possible during a semester.

The required background for the course is a decent foundation of algebraic geometry, that is, a knowledge of Hartshorne's graduate textbook "Algebraic Geometry".

**Keywords**

algebraic geometry, positive characteristic

**Learning Prerequisites****Required courses**

Algebraic geometry (masters course), Scheme theory (PhD course), Sheaf cohomology (PhD course)

**Learning Outcomes**

By the end of the course, the student must be able to:

- understand positive characteristic techniques in algebraic geometry

**Resources****Notes/Handbook**

provided course notes