

# MATH 513

## Algebraic Geometry

(2019 Spring Semester)

by  
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Prerequisites: Consent of the instructor

Credits: (3-0)3 / 7 ECTS

Outline(tentative): The main aim in this class is to talk about binary quadratic forms. This is one of the main subjects where different topics come together. The first part of the course will be mostly algebraic and deal with the classical theory. The topics covered in the final part of the lecture will be a little more advanced. As we progress, I will mention some topics for individual projects. Each student is expected to choose one and present it.

No prior knowledge will be assumed. The following is a tentative weekly outline :

Week 1 BV: 1.1,1.2,1.3 & B : Chp.1 - Addendum : The Modular Group

Week 2 BV : 2.1 - 2.5

Week 3 BV : 5.1 - 5.4

Week 4 BV : 5.5, 5.7 - 5.11

Week 5 BV : 6.1 - 6.5

Week 6 BV : 6.8

Week 7 BV : 6.9 - 6.12

Week 8 BV : 6.15 - 6.17

Weeks 9&10 B : Chp 6

Weeks 11&12 B : Chp 7

Weeks 13&14 B: Chp 8

### Bibliography:

- Buchmann & Vollmer, *Binary quadratic forms*
- Buell, *Binary quadratic forms : classical theory and modern computations*
- Jacobson & Williams, *Solving the Pell equation*

Program: Monday , 09h00 - 12h00 Seminer II

### Evaluation:

- Presentations: %50
- Final: % 50