



## Syllabus

# Topics in number theory and algebraic geometry 1 - 80942

*Last update 27-09-2023*

HU Credits: 1

Responsible Department: Mathematics

Academic year: 0

Semester: 1st Semester

Teaching Languages: English and Hebrew

Campus: E. Safra

Course/Module Coordinator: Prof Ari Shnidman

Coordinator Email: [ari.shnidman@gmail.com](mailto:ari.shnidman@gmail.com)

Coordinator Office Hours: By appointment

Teaching Staff:  
Prof Schneidman Ari

Course/Module description:

---

The purpose of this lunch seminar is to expose students a wide array of techniques and results in number theory and arithmetic geometry. The theme of the semester will be "explicit number theory". Our aim is to keep prerequisites low though exactly how much background is assumed will depend on the week. Prior exposure to algebraic or analytic number theory or algebraic curves should be sufficient to follow for most weeks.

Course/Module aims:

To describe central topics in number theory and algebraic geometry

Learning outcomes - On successful completion of this module, students should be able to:

To understand central topics in number theory and algebraic geometry

Attendance requirements(%):

100

Teaching arrangement and method of instruction: Lectures

Course/Module Content:

Possible topics:

Integral points and Runge's method; Skolem's method and Skolem-Mahler-Lech's theorem;

Chaubaty's theorem and Chaubaty-Coleman method;

Siegel's theorem;

Belyi's theorem;

Davenport-Zannier polynomials, dessins, and Hall's conjecture;

Hasse-Minkowski theorem;

Failures of local-to-global principle and Cassels-Tate pairings; Classical algebraic/arithmetic geometry via examples of curves and surfaces

Required Reading:

None

Additional Reading Material:

None

Grading Scheme:

---

*Attendance / Participation in Field Excursion 100 %*

*Additional information:*