



## *The Hebrew University of Jerusalem*

### *Syllabus*

## *Topics in number theory and algebraic geometry 2 - 80943*

*Last update 03-03-2020*

*HU Credits: 1*

*Degree/Cycle: 2nd degree (Master)*

*Responsible Department: Mathematics*

*Academic year: 0*

*Semester: 2nd Semester*

*Teaching Languages: English and Hebrew*

*Campus: E. Safra*

*Course/Module Coordinator: Prof Yakov Varshavsky*

*Coordinator Email: [yakov.varshavsky@mail.huji.ac.il](mailto:yakov.varshavsky@mail.huji.ac.il)*

*Coordinator Office Hours: by appointment*

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Teaching Staff:

Prof Michael Temkin

Course/Module description:

The goal of the seminar will be to give a (relatively) gentle introduction to various topics, which should be accessible to beginning but motivated Master and PhD. students.

The tentative plan for the first part of this semester is to study irreducible representations of "finite groups of Lie type" such as  $SL(2, F_q)$ ,  $GL(n, F_q)$  etc.

In particular, we are going to present a beautiful theory of Deligne and Lusztig (P. Deligne and G. Lusztig, "Representations of reductive groups over finite fields.", *Ann of Math*, 103 (1976), 103-161).

In the first lecture we will try to describe this theory in the simplest cases, like  $SL(2, F_q)$  and  $GL(2, F_q)$ .

Prerequisites: Basic representation theory of finite groups.

Course/Module aims:

No

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

No

Attendance requirements(%):

0

Teaching arrangement and method of instruction: Lecture

Course/Module Content:

No

Required Reading:

No

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Additional Reading Material:

*P. Deligne and G. Lusztig, "Representations of reductive groups over finite fields.",  
Ann of Math, 103 (1976), 103–161.*

Course/Module evaluation:

*End of year written/oral examination 0 %*

*Presentation 0 %*

*Participation in Tutorials 0 %*

*Project work 0 %*

*Assignments 0 %*

*Reports 0 %*

*Research project 0 %*

*Quizzes 0 %*

*Other 100 %*

TBA

Additional information:

No