Syllabus

Elementary number theory for Odyssey program - 80697

Last update 28-11-2018

HU Credits: 4

Responsible Department: Mathematics

Academic year: 0

Semester: 2nd Semester

Teaching Languages: Hebrew

Campus: E. Safra

Course/Module Coordinator: Dr Alex Gurevich

 Coordinator Email: gurevich@ma.huji.ac.il

Coordinator Office Hours: by appointment

Teaching Staff:
  Dr. Alex Gourevich

Course/Module description:

Elementary topics in Number Theory

<u>Course/Module aims:</u>
  Acquaint the students with basic topics in number theory

<u>Learning outcomes - On successful completion of this module, students should be able to:</u>
  Solve problems in number theory

<u>Attendance requirements(%):</u>
  No

Teaching arrangement and method of instruction: Lecture

<u>Course/Module Content:</u>
  - Integers
- Primes and factorization
- Linear Diophantine equations
- Congruences
- Numbers in other bases
- Decimals
- Fermat's, Wilson's and Euler's theorems
- Multiplicative functions
- Perfect numbers
- Primitive roots
- Quadratic reciprocity
- Pythagorean triple
- Infinite descent and Fermat's Last theorem
- Sums of squares
- Counting of primes
- Approximations and Farey sequences
- Continued fractions and Pell□s equation
- Rings of integers in quadratic extensions
- Introduction into modern number theory

<u>Required Reading:</u>
 Underwood Dudley: Elementary Number Theory

Additional Reading Material:
No

Course/Module evaluation:
End of year written/oral examination 90 %
Presentation 0 %
Participation in Tutorials 0 %
Project work 0 %
Assignments 10 %
Reports 0 %
Research project 0 %
Quizzes 0 %
Other 0 %

Additional information:
No