



The Hebrew University of Jerusalem

Syllabus

Preparatory math for Odyssey program part 1 - 80306

Last update 06-11-2018

HU Credits: 0

Degree/Cycle: 1st degree (Bachelor)

Responsible Department: Mathematics

Academic year: 2020

Semester: 1st Semester

Teaching Languages: Hebrew

Campus: E. Safra

Course/Module Coordinator: Dr. Alex Gourevich

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

Coordinator Office Hours: by appointment

Teaching Staff:

Dr. Alex Gourevich

Course/Module description:

Topics in Math required for the University Studies

Course/Module aims:

Prepare students for studying Math at the University

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

Solve problems in Math

Attendance requirements(%):

85

Teaching arrangement and method of instruction: Lecture

Course/Module Content:

- Sets, Functions, Image, Preimage
- Real functions, Graphs, Equations and Inequalities
- Odd and even functions, increasing and decreasing functions
- Linear and quadratic functions
- Injective and surjective functions, Inverse function
- Polynomial functions, Roots
- Exponential functions, Logarithmic functions
- Unit circle, Radian measure, Sine, Cosine
- Arcsine, Arccosine
- Tangent, Arctangent
- Cartesian coordinates, points, vectors
- Lines, parametric form, intersection point
- Scalar product, projections
- Distance between two points, distance between a point and a line
- Area of parallelogram, area of triangle
- Complex numbers, addition and multiplication
- Absolute value, conjugate and inverse of a complex number
- Polar form of a complex number, de Moivre's formula
- Mathematical Induction
- Greatest common divisor, Euclidian algorithm

Required Reading:

No

Additional Reading Material:

No

Course/Module evaluation:

End of year written/oral examination 80 %

Presentation 0 %

Participation in Tutorials 0 %

Project work 0 %

Assignments 10 %

Reports 0 %

Research project 0 %

Quizzes 10 %

Other 0 %

Additional information:

No