

The Hebrew University of Jerusalem

Syllabus

LINEAR ALGEBRA (1) - 80134

Last update 09-12-2021

<u>HU Credits:</u> 6

Degree/Cycle: 1st degree (Bachelor)

<u>Responsible Department:</u> Mathematics

<u>Academic year:</u> 0

Semester: 1st and/or 2nd Semester

<u>Teaching Languages:</u> Hebrew

<u>Campus:</u> E. Safra

Course/Module Coordinator: Alex Gurevich

Coordinator Email: gurevich@math.huji.ac.il nevo.eran@gmail.com

Coordinator Office Hours: Tuesday, 13-14

Teaching Staff:

Prof Omer Ben-Neria, Dr. Alex Gourevich, Mr. Raz Or, Mr. Muhamad Abu-Radi, Prof Michael Temkin, Prof Eran Nevo, Mr. Levy Ofek, Mr. Israeli Itamar

Course/Module description:

Systems of Linear Equations. Matrices. Fields. Vector Spaces. Subspaces. Span. Linear Independence. Determinants. Linear Transformations. Kernel and Image. Dual Spaces.

<u>Course/Module aims:</u> Introduction to Linear Algebra.

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

Familiarity with the definition of a Field, a Vector Space, a Basis, and a spanning set.

To prove theorems regarding the basic properties of vector spaces.

The concept of a linear transformation and its matrix representation, and the concept of a determinant.

Applications of linear spaces and transformations to analyze solutions to systems of linear equations.

<u>Attendance requirements(%):</u> 0

Teaching arrangement and method of instruction: Lecture + exercise

Course/Module Content:

Systems of Linear Equations. Matrices. Fields. Vector Spaces. Subspaces. Span. Linear Independence. Determinants. Linear Transformations. Kernel and Image. Dual Spaces. Other topics may be taught.

<u>Required Reading:</u> none

<u>Additional Reading Material:</u> K.Hoffman, R.Kunze, Linear Algebra

Course/Module evaluation:

End of year written/oral examination 95 % Presentation 0 % Participation in Tutorials 0 % Project work 0 % Assignments 5 % Reports 0 % Research project 0 % Quizzes 0 % Other 0 %

<u>Additional information:</u> The Final Grade will be calculated by the following formula:

max(Basic,0.9*Basic+0.1*Active)

where

Basic &eq; 0.95*Exam+0.05*Exercise

Exam &eq; Examination Exercise &eq; Assignements Active &eq; Participation in Tutorials

Other topics may be taught.