



The Hebrew University of Jerusalem

Syllabus

PCF Theory - 80712

Last update 31-07-2023

HU Credits: 2

Degree/Cycle: 2nd degree (Master)

Responsible Department: Mathematics

Academic year: 2024

Semester: 2nd Semester

Teaching Languages: Hebrew

Campus: E. Safra

Course/Module Coordinator: Shimon Garti

Coordinator Email: shimon.garty@mail.huji.ac.il

Coordinator Office Hours: By appointment.

Teaching Staff:

Dr. Shimon Garty

Course/Module description:

We intend to learn Saharon Shelah's pcf theory, especially through the set theoretic aspect of cardinal arithmetic. We shall try to cover the fundamental theorem about the size of the power set of aleph omega (when aleph omega is a strong limit cardinal). If time permits, we shall see some applications of pcf in other mathematical areas.

Course/Module aims:

Same as in "learning outcomes".

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

Familiarity with Saharon Shelah's pcf theory.

Understand some notions of the above theory through the set theoretic aspect of cardinal arithmetic.

To study about the revised GCH.

To study about the size of the power set of aleph omega (when aleph omega is a strong limit cardinal).

Attendance requirements(%):

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Teaching arrangement and method of instruction: Lecture

Course/Module Content:

We intend to learn Saharon Shelah's pcf theory, especially through the set theoretic aspect of cardinal arithmetic. We shall try to cover the revised GCH and the fundamental theorem about the size of the power set of aleph omega (when aleph omega is a strong limit cardinal). If time permits, we shall see some applications of pcf in other mathematical areas

Required Reading:

none

Additional Reading Material:

The article of Abraham and Magidor in the Handbook of Set Theory.

Shelah's book on Cardinal Arithmetic.

Grading Scheme:

Essay / Project / Final Assignment / Home Exam / Referat 100 %

Additional information:

none