Operator Theory, 8.0 credits

Operator Theory, 8.0 hp

Third-cycle education course

6FMAI09

Dept of Mathematics

Valid from: First half-year 2023

Approved by
Head of Department

Approved

Registration number

Entry requirements

The course requires some basic knowledge from Functional Analysis (Normed spaces, Bounded operators and Functionals).

Contents

This course covers selected topics of spectral theory of linear operators in Hilbert and Banach spaces. A special attention will be paid to examples and applications. The following topics are included:

- Bounded linear operators in Hilbert and Banach spaces.
- Spectrum and Resolvent.
- Compacts operators.
- Fredholm operators.
- Fredholm Alternative.
- Self-Adjont operators.

Educational methods

Lectures and problem solving seminars.

Examination

Exercises (assignments).

Grading

Two-grade scale

Course literature

Course literature: M. Reed, B. Simon, ”Methods Of Modern Mathematical Physics”, Vol.1, Academic Press, 1981.
Supplementary literature: E. Kreyszig, ”Introductory Functional Analysis with Applications”, Wiley, 1989.