

Functional Analysis 2

Course Syllabus

Fall Term 2010 — SNU

Course Title Functional Analysis 2 (in English)

Course number 3341.604

Instructor Gerald Trutnau

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Course homepage <http://www.math.snu.ac.kr/~trutnau/teachingFA2.html>

Course Objective We will study: finite dimensional approximations (Ritz-Galerkin approximation), compact operators (compact embeddings and integral operators), spectrum of compact operators, self-adjoint operators, and also additional properties of Sobolev functions. We may also study some other topics that will be precised later in some update.

There will be less homework than last semester.

References Recommended references:

- Brézis, Haïm: Analyse fonctionnelle, Dunod (2002)
- Lax, Peter D.: Functional Analysis, Wiley-Interscience (2002)
- Rudin, Walter: Functional Analysis, McGraw-Hill, 2 edition (1991)
- Yoshida, Kôsaku: Functional Analysis (Springer Classics in Mathematics) (6th edition, 1980)
- Zeidler, Eberhard: Applied Functional Analysis: Applications to Mathematical Physics (Applied Mathematical Sciences) (v. 108) , Springer (1995)
- Zeidler, Eberhard: Applied Functional Analysis: Main Principles and Their Applications (Applied Mathematical Sciences) (v. 109) , Springer (1999)

Evaluation - Attendance: (will not be checked). However, students are supposed to know the material taught in class.

- (If TA is assigned) Assignment sheets (40 % of final score);

Students must solve exercises regularly, and will be given assignment sheets mostly every week.

- Take Home Exam I (7-8th week, 25 % (45 % if TA is not assigned) of final score);

- Take Home Exam II (14-15th week, 25 % (45 % if TA is not assigned) of final score);

Other: (10 % of final score)