

POSITIVE OPERATORS AND BANACH LATTICES II

SPRING 2011/12

INSTRUCTOR: Mert Çağlar, İstanbul Kültür University, DMCS

TIMETABLE: Monday 13:00–16:00 (İKÜ, 3C-17)

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ABOUT REGISTRATION: The course is a continuation of MBD 0014/Positive Operators and Banach Lattices, given in the Fall 2011/12 term by the instructor. Since there is no other course related to Positive Operators and Banach Lattices in the Mathematics Ph.D. Program Curriculum* of İKÜ, those who want to take the present course should register to MBD 0015/Topological Vector Spaces.

(*) http://www.iku.edu.tr/EN/ects_bolum.php?m=2&p=64&f=8&r=0&ects=ders

ASSESSMENT: One mid-term and one final examination, and several homework assignments will be given during the semester. The letter grade of the student will be determined upon considering the exams and the homeworks along with student's participation to the course.

PRE-REQUISITES: MBD 0014/Positive Operators and Banach Lattices, or background about the first chapter of the textbook.

PRINCIPAL TEXTBOOK: C.D. Aliprantis & O. Burkinshaw, *Positive Operators*, Springer, The Netherlands, 2006

PROGRAMME

WEEKS	SUBJECTS TO BE COVERED
1 & 2	Components of a positive operator & Lattice homomorphisms
3 & 4	Orthomorphisms
5 & 6	Topological vector spaces & Weak Topologies on Banach spaces
7 & 8	Locally convex-solid Riesz spaces
Will be announced	Mid-term Exam
9 & 10	Banach lattices with order-continuous norms
11 & 12	Weak compactness in Banach lattices
13 & 14	Banach lattices of operators
Will be announced	Final Examination

SUGGESTED READING:

- Y.A. Abramovich & C.D. Aliprantis, *An Invitation to Operator Theory*, American Mathematical Society, Graduate Studies in Mathematics, Vol. 50, Providence, RI, 2002.
- C.D. Aliprantis & O. Burkinshaw, *Locally Solid Riesz Spaces with Applications to Economics*, 2nd ed., American Mathematical Society, Mathematical Surveys and Monographs, Vol. 105, Providence, RI, 2003.
- W.A.J. Luxemburg & A.C. Zaanen, *Riesz Spaces I*, North-Holland Publishing Co., Amsterdam, 1971.
- P. Meyer-Nieberg, *Banach Lattices*, Springer-Verlag, Berlin, Heidelberg, 1991.
- H.H. Schaefer, *Banach Lattices and Positive Operators*, Springer-Verlag, New York, Heidelberg, Berlin, 1974.
- H.-U. Schwarz, *Banach Lattices*, Teubner Verlag, Leipzig, 1984.
- B.Z. Vulikh, *Introduction to the Theory of Partially Ordered Spaces*, Trans. by Leo F. Boron with the editorial collaboration of Adriaan C. Zaanen and Kiyoshi Iséki, Wolters-Noordhoff, Ltd., Groningen, The Netherlands, 1967.
- A.C. Zaanen, *Riesz Spaces II*, North-Holland Publishing Co., Amsterdam, 1983.
- A.C. Zaanen, *Introduction to Operator Theory in Riesz Spaces*, Springer-Verlag, Berlin, Heidelberg, 1997.