

MATH527

Topics in Topology
SPRING 2013/14

INSTRUCTOR: Eberhard Malkowsky

TIMETABLE: Tu 11–14

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ASSESSMENT: Project and Presentation

PRE-REQUISITES:

Functional Analysis: (Undergraduate level) Hahn-Banach Theorem, Baire's Category Theorem and its consequences.

PRINCIPAL TEXTBOOK: A. Wilansky, *Functional Analysis* Blaisdell Publishing Company, 1964

PROGRAMME

WEEKS	SUBJECTS TO BE COVERED
1 & 2	Linear spaces, special functions, linear maps
3 & 4	Balanced, absorbing, convex and affine sets, quotient spaces
5 & 6	Topological spaces, basis and subbasis of topologies, convergence of nets
7 & 8	Sup and weak topologies, semimetrizability, maximal subspaces
Will be announced	Project
9 & 10	Product topology, subnets, compact sets, cluster points
11 & 12	Linear topological spaces, Hausdorff spaces, closed maps, closed graph lemma
13 & 14	Complete metric spaces, open mapping, closed graph theorems, uniform boundedness principle
Will be announced	Presentation

SUGGESTED READING:

- A. Wilansky, *Modern Methods in Topological Vector Spaces*, McGraw Hill, 1978
- W. Rudin, *Functional Analysis*, McGraw Hill