References for Math 580A, Topological Combinatorics, Fall 2017

A big chunk of the course will cover Matousek's book Using the Borsuk-Ulam Theorem.

Other course material is coming from:

Welker, V., Ziegler, G., Zivaljevic, R., Homotopy colimits -- comparison lemmas for combinatorial applications

Barmak,J. Algebraic topology of finte spaces and applications

---

Some surveys of topological combinatorics:

Björner, A. Topological methods. Handbook of combinatorics, Vol. 1, 2, 1819–1872, Elsevier Sci. B. V., Amsterdam, 1995.

Karasëv, R. N., Topological methods in combinatorial geometry Uspekhi Mat. Nauk 63 (2008), no. 6(384), 39–90; translation in Russian Math. Surveys 63 (2008), no. 6, 1031–1078

Zivaljevic, R., Topological Methods In Discrete Geometry, preliminary version

---

Applications of Borsuk-Ulam and equivariant topology

Anderson, Laura; Wenger, Rephael Oriented matroids and hyperplane transversals. Adv. Math. 119 (1996), no. 1, 117–125.

Bárány, I.; Lovász, L., Borsuk's theorem and the number of facets of centrally symmetric polytopes. Acta Math. Acad. Sci. Hungar. 40 (1982), no. 3-4, 323–329.

Blagojević, Pavle V. M.; Ziegler, Günter M. Convex equipartitions via equivariant obstruction theory. Israel J. Math. 200 (2014), no. 1, 49–77.

Blagojević, Pavle V. M., Ziegler, Günter M. Beyond the Borsuk-Ulam theorem: The topological Tverberg story, arxiv preprint

Dobbins, Michael A point in a nd-polytope is the barycenter of n points in its d-faces. Invent. Math. 199 (2015), no. 1, 287–292.

Lovász, L. Kneser's conjecture, chromatic number, and homotopy. J. Combin. Theory Ser. A 25 (1978), no. 3, 319–324.

Lovász, László; Schrijver, Alexander, A Borsuk theorem for antipodal links and a spectral characterization of linklessly embeddable graphs. (Proc. Amer. Math. Soc. 126 (1998), no. 5, 1275–1285.

Živaljević, Rade T.(YU-SAOS); Vrećica, Siniša T, An extension of the ham sandwich theorem Bull. London Math. Soc. 22 (1990), no. 2, 183–186.

Topology of posets

Anderson, Laura Homotopy groups of the combinatorial Grassmannian. Discrete Comput. Geom. 20 (1998), no. 4, 549–560.

Anderson, Laura; Davis, James F., Mod 2 cohomology of combinatorial Grassmannians. Selecta Math. (N.S.) 8 (2002), no. 2, 161–200.

Björner, Anders; Tancer, Martin Note: Combinatorial Alexander duality—a short and elementary proof. Discrete Comput. Geom. 42 (2009), no. 4, 586–593.

Björner, Anders; Wachs, Michelle L., Shellable nonpure complexes and posets. I. Trans. Amer. Math. Soc. 348 (1996), no. 4, 1299–1327.

Björner, Anders; Wachs, Michelle L., Shellable nonpure complexes and posets. II. Trans. Amer. Math. Soc. 349 (1997), no. 10, 3945–3975

McCammond, Jon; Noncrossing hypertrees, arxiv preprint

Shareshian, John; Woodroofe, Russ, Order complexes of coset posets of finite groups are not contractible. Adv. Math. 291 (2016), 758–773.

From:
http://www2.math.binghamton.edu/ - **Department of Mathematics and Statistics, Binghamton University**

Permanent link:
http://www2.math.binghamton.edu/p/people/laura/here

Last update: **2017/09/28 20:06**