

# Программа спецкурса "Дифференциальная ТОПОЛОГИЯ"

Составленная Мищенко А.С.

31 августа 2015 г.

- Smooth manifolds.
- Tangent bundles.
- Bundles. Vector bundles.
- Calculus on smooth manifolds. Differential Forms.
- Homology and Cohomology. De Rham Cohomology.
- Connections and Curvatures.
- Characteristic classes. Chern-Weil Theory.
- Immersions and embeddings. Bordisms
- Surgery. Smooth structures on homotopy type.

## Список литературы

- [1] John Milnor *Differential Topology*, Princeton University, (1958)
- [2] Andrew Wallace *Differential Topology, First Steps*, W.A.Benjamin, Inc., New York, Amsterdam, (1968)
- [3] James R. Munkres *Elementary Differential Topology*, Ann. of Math. Stud., 54, Massachusetts Institute of Technology, (1966)
- [4] John Milnor *Topology from the Differentiable Viewpoint*, The University Press of Virginia, (1965)
- [5] James R. Munkres *Analysis on Manifolds*, Addison Wesley, Redwood City, CA, (1990)
- [6] Bjorn Ian Dundas *Differential Topology*, Johns Hopkins University, (2013)

- [7] A.S.Mishchenko *Topology of manifolds*, Harbin Institute of Technology, (2004)
- [8] J.M.Lee *Introduction to Smooth manifolds*, University of Washington, Seattle, WA (2000)
- [9] M.A. Kervaire *A Manifold which does not admit any Differentiable Structure*. Commentarii Mathematici Helvetici vol. 34, (1960)
- [10] R.C. Kirby, and L.C. Siebenmann *Foundational Essays on Topological Manifolds. Smoothings, and Triangulations*. Princeton, New Jersey: Princeton University Press (1977)
- [11] A. Hatcher *Vector bundles and K-theory* <http://www.math.cornell.edu/hatcher/#VBKT>,(2009)
- [12] Мищенко А.С. *Векторные расслоения и их приложения*, "Наука Физматлит, 1984, 208 с.
- [13] 1998 Luke Glenys, Mishchenko Alexander S. *Vector bundles and their applications*. Kluwer Academic Publishers, Dordrecht, ISBN 0-7923-5154-1, 978-1-4419-4802-1, 978-1-4757-6923-4, 254 p.