Yan Soibelman, Spring 2008.
Math 991 - Topics in Algebra

The book for the course is: S. Donaldson, P. Kronheimer, The geometry of four-manifolds.

Along with standard theorems, the course will include:

1) Yang-Mills theory on 4d manifolds
2) Wall-crossing phenomenon
3) Seiberg-Witten invariants
4) 6d analog: Donaldson-Thomas theory
5) Stability conditions for Calabi-Yau categories
6) Counting of BPS states in N=2 4d gauge theories

Prerequisites for the course are: standard knowledge of differential geometry,complex analysis, homological algebra.
For more details about the course, please see Professor Soibelman.

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