

# Math 603D:101

## 2014W Term 1, September - November

### Course Outline

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**Course Title:** K THEORY

**Outline:** To lay the ground work for research in algebraic topology, one common practice is to go through three semesters of graduate courses in the subject. In last year's 527/528, the standard topics, roughly equivalent to those in Allen Hatcher's book *Algebraic Topology* (Cambridge University Press 2002) had been covered. In Math 603D, we shall take up K theory, which is the exclusive concern of Hatcher's *Vector Bundles and K Theory*, available through

[www.math.cornell.edu/~hatcher](http://www.math.cornell.edu/~hatcher)

As the most intuitive of all the (generalized) cohomology theories, K Theory—simple and profound at the same time—serves to provide the audience an overall picture of the power of topology in resolving problems of broad interest in algebra and geometry. Through its study, one can get a good glimpse of the development of topology/geometry during the second half of the 20<sup>th</sup> century. See the list of topics in Hatcher's *VBKT*.

Math 603D will use the lecture format, with assignments of exercises and open topics for discussion. Participants are encouraged to do some presentation of their own choice towards the end of the course.