MATH 595 Higher Algebraic $K$-theory: classical results  
Fall 2017 CRN: 58570

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**Course description** Algebraic $K$-theory was introduced in the 50’s by Grothendieck for his Riemann-Roch theorem. Since then it has played an important role in many areas of mathematics: algebra, geometry, number theory, and topology. The goal of this class is to provide an introduction to Quillen’s higher algebraic $K$-theory. A (tentative) list of topics we’ll cover includes:

1. Classical results on $K_0$, $K_1$ of rings.
2. Quillen’s construction of higher algebraic $K$-theory and fundamental theorems.
3. Quillen’s computation of $K$-theory of finite fields.
4. Suslin’s computation of $K$-theory of algebraically closed fields; Suslin-Gabber rigidity.

**Prerequisites:** Some knowledge of basic algebra and basic homotopy theory.

**Recommended text:** “The $K$-book” by Chuck Weibel. (Available on his homepage.)