The goal of this course is to give an introduction to the structure theory of noncommutative algebras and modules over them. The topics to be covered are:

2. Projective and injective modules, Morita equivalence.
3. Localization and Goldie’s theorem.
4. Central simple algebras and the Brauer group.
5. Maximal orders.
6. Irreducible representations, polynomial identity rings, invariant theory.

We will use M. Artin’s notes which can be found at www-math.mit.edu/~etingof and cover most of this material.

To officially pass the course, it will be required to solve homework assignments which will be assigned on Thursdays and due the following Thursday.