MATH 3094 (Spring 2017)
Quiver Representations

A quiver is an oriented graph. A quiver representation is a collection of vector spaces and linear maps. One vector space V_i for each vertex i of the quiver and one linear map f_{ij} from V_i to V_j for each arrow $i\to j$ of the quiver

Description of the Course: The complexity of different representations depends on the quiver. For some (few) quivers we can explicitly write down a finite number of representations such that any representation of the quiver can be constructed from our finite list by taking direct sums and using isomorphisms. In these cases our finite list can be constructed combinatorially in the so-called Auslander-Reiten quiver.

We will study the properties of quiver representations, and see how to compute the Auslander-Reiten quiver in specific examples, using algebraic methods as well as combinatorial methods for example triangulations of polygons.

Prerequisites: MATH 3210 Abstract Linear Algebra or permissions from the instructor. Some algebraic experience would be good, the concept of a homomorphism, isomorphism, kernels, quotients. But no knowledge of group or ring theory is required. If needed, the concepts from linear algebra can be reviewed in the first week of the course.

For more information or to enroll, please contact Professor **Ralf Schiffler** at ralf.schiffler@uconn.edu.