

Course Title: Dynamics on moduli space

Course #: 81400

Day(s), Time & Location: Fridays 9:30 AM - 11:30 AM

Instructor Name: Patrick Hooper

Contact Information: GC Room 4217-02, whooper@ccny.cuny.edu

Pre-Requisites: _____

Office Hours: Fridays 11:45-12:45

Description:

We will study the dynamics of the Teichmüller flow on moduli spaces of (real 2-dimensional) surfaces. Through the principle of renormalization, Teichmüller trajectories associated to a surface can be used to gain an understanding of dynamical and geometric properties of the surface and associated objects such as interval exchange transformations. The course has the following three goals. First, I will introduce some classic results in the field and use these results to illustrate the more general philosophy of renormalization. Second, I'd like to discuss some more general contexts in which this philosophy has lead to interesting geometric and dynamical results. This will allow me to state some easily accessible directions for research projects. Finally, I plan to discuss recent progress in the study of the dynamics of the Teichmüller flow, and in particular, the recent ground-breaking results of Eskin, Mirzakhani and Mohammadi on orbit closures and consequences that have been discovered since.