Exponential sums play an important role in many questions in number theory, and also in some problems arising from other fields. The first part of the course will cover classical material. For this part we will follow selected chapters from Montgomery’s book. In the second part of the course we will study some recent papers on the distribution of zeros of the Riemann zeta function, points on curves over finite fields, billiards, lattice points and Farey fractions, where exponential sums play a central role.

Prerequisite: MATH 531.

Recommended Textbook:

There will be no exams. Students registered for this course will be expected to give one or two lectures on some topics related to the content of the course. In addition some homework problems will be assigned.

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