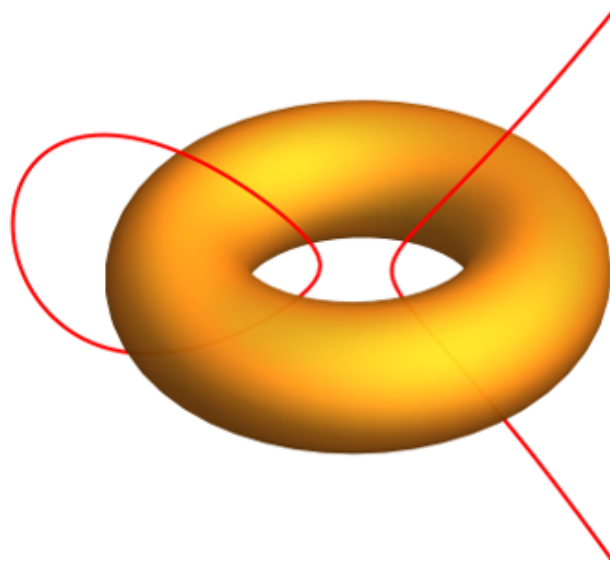




# *Graduate Mathematics Seminar*

## Rational Points on Curves

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**Abstract:** Arithmetic geometry, in essence, is the study of Diophantine equations. Among the most notable example of such is Fermat's last theorem which states that there are no three positive integers  $a, b, c$  which satisfy the equation  $a^n + b^n = c^n$  for any integer value of  $n > 2$ . The truly remarkable proof of this conjecture stimulated the development of number theory, established many connections between various subjects of mathematics, opened up entire new approaches to numerous other problems. Elliptic curves played a key role in the proof and became one of the most fundamental objects in the study of Diophantine questions. An elliptic curve  $E$  is roughly defined by an equation  $y^2 = x^3 + ax + b$  for complex numbers  $a, b$ . The geometry of the cubic curve allows one to do arithmetic on its points. In this talk, we will learn about this arithmetic structure and some research questions in this area.

***When:*** Monday, October 28, 2019, 6:00 – 7:00 pm  
***Where:*** CSUCI, Sierra Hall 2411

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