

NOVEMBER

Topic: Geodesics and Parallel Transport on Surfaces

Speaker: Dr. Chad Kuhns

Time: 2:00—2:50 PM

Date: Friday, November 11

Abstract: Imagine that you live on a curved surface without gravity and you need some coffee. Blissfully unaware of the third dimension as you drive to Starbucks, you only register acceleration that is tangential to the surface. This scenario leads to a mathematical idea called the covariant derivative, which is used to define geodesics ("lines" on the surface), parallel transport of vectors, and more. We will study these ideas using multivariate calculus and geometry, as well as computer software to help with visualization.

Topic: Diophantine Equations with Integer Solutions

Speaker: Mr. Alex Bathula

Time: 2:00—2:50 PM

Date: Friday, November 18

Location: Rm. 010 Science West

Abstract: Integral solutions of equations with integral coefficients and with more than one unknown is a difficult problem in number theory. Famous mathematicians, Pythagoras, Diophantine, Fermat, Euler, Lagrange were concerned with this problem. Here we deal with a simple case of solving equations of first degree in two unknowns, $ax+by=c$ in integers "here a & b are non zero integers and c is an arbitrary integer and a and b are relatively prime." A useful theorem will be introduced along with some nice examples.

Fall 2011 Speakers

Dr. Ariana Dundon

Ms. Maria Aronne

Ms. Teresa McCullough

Dr. Thomas Johnson

Dr. Mussa Abdulkadir

Mr. Rick Penn

Dr. Chad Kuhns

Mr. Alex Bathula

Dr. Atul Roy

DECEMBER

Topic: Fractals: They Are All Around Us!

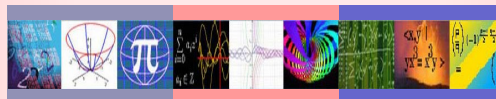
Speaker: Dr. Atul Roy

Time: 2:00—2:50 PM

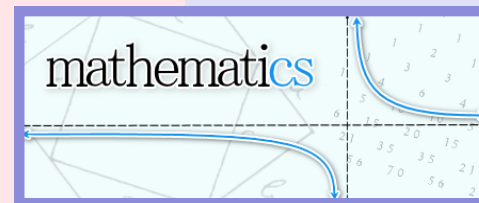
Date: Friday, December 9

Location: Rm. 010 Science West

Abstract: This lecture will be an introduction to fractals and their uses in many parts of our modern lives. Many people did not like fractions but rarely will a person dispute the beauty of fractals. Come, listen, participate and discuss this fascinating branch of mathematics brought to special recognition and prominence by the work of Benoît Mandelbrot.



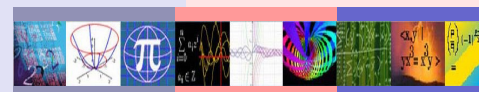
Everyone is Welcome to Attend!



Math Talks

Fall 2011

**All talks are held on
Fridays from
2:00 to 2:50 PM
in Room SW 010**



SEPTEMBER

Topic: A Brief History of Cryptography

Speaker: Dr. Ariana Dundon

Time: 2:00—2:50 PM

Date: Friday, September 16

Location: Rm. 010 Science West

Abstract: Ever wonder what kinds of codes were used by Julius Caesar, Mary Queen of Scots, or Louis XIV? Even more importantly, who broke those codes? We will delve into the rich history of code-making (cryptography) and code-breaking (cryptanalysis) from Ancient Greece to the American Civil War.

Topic: Peering into the World of Simulations

Speaker: Ms. Maria Aronne

Time: 2:00—2:50 PM

Date: Friday, September 30

Location: Rm. 010 Science West

Abstract: A simulation of a procedure is a process that behaves the same way as the procedure itself so that similar results are produced. The widespread availability of calculators and computers has made it relatively easy to use simulation methods, so that simulations are now used often for determining probability values. Bring your graphing calculators and join us for some simulations that will take us from the experiment of Rolling a Die N Times to the Central Limit Theorem.

OCTOBER

Topic: Two Men's Machines

Speaker: Ms. Teresa McCullough

Time: 2:00—2:50 PM

Date: Friday, October 7

Location: Rm. 010 Science West

Abstract: Conway and Turing both invented imaginary computers with finite rules and potentially infinite memory. The Turing machine has important theoretical implications for computers and mathematics. Many hours of computer time have been spent on Conway's game of life because people found it fun. These two machines look different but share some very basic properties.

Topic: The Story of π

Speaker: Dr. Thomas Johnson

Time: 2:00—2:50 PM

Date: Friday, October 14

Location: Rm. 010 Science West

Abstract: How do you find pi? We will tell the story of the search for the ratio of the circumference to the diameter of a circle. Learn how the ancient cultures of Egypt, Greece, China and India all determined pi. We will also discuss more modern methods for finding pi, including the methods of Newton and Euler, as well as how computing pi is now used to test present day high-speed computers.

OCTOBER

Topic: One Dimensional Q-Random Walk

Speaker: Dr. Mussa Abdulkadir

Time: 2:00—2:50 PM

Date: Friday, October 28

Location: Rm. 010 Science West

Abstract: We will discuss some variant forms of one-dimensional quantum random walk, and express its evolution in time in terms of some integrals.

NOVEMBER

Topic: Game Theory

Speaker: Mr. Rick Penn

Time: 2:00—2:50 PM

Date: Friday, November 4

Location: Rm. 010 Science West

Abstract: What sorts of games do mathematicians study (and play) in game theory? We'll learn and play some mathematical games, including the famous Prisoners' Dilemma and some less well known examples. We'll then compare the results obtained to those predicted for a player using a mathematically optimal strategy.
