

Math Department Newsletter

Fall 2011

Spring 2012 Courses

Cryptography- Are you ready to see an application of Number Theory? This course will investigate many different types of cryptosystems, including the Public Cryptosystem which is used today from the Military to credit card companies.

Abstract Algebra- This class looks at the structure of number systems and what properties of "algebra" hold for different sets, such as, matrices or symmetries of a square. It's very abstract and proof based.

Geometry- What is a straight line? After a semester of Geometry you will be able to answer this question. This class will make you think about mathematics in a different way and you'll be constantly thinking outside the box (or on the surface of a box). Also, this course will take care of your writing intensive requirement!

Differential Equations- Great course to take after passing Calc. II. In it, you'll learn real life applications that use differential equations. You'll also learn Dr. Brown's second favorite theorem. (How exciting!!!)

Capstone Prep- You must have had at least one upper-division math class before taking this. This class will require you to think of possible Capstone ideas and help you become comfortable using Latex. This class is not required, but without this course it will be nearly impossible to complete your Capstone project.

What Our Students Did Last Summer

Travis Severt spent his summer at Kansas State University's REU studying laser induced dissociation of O_2^+ .

Michael Rodriguez spent his summer studying the Marangoni effect and capillary pressures at SRI International.

Randee Smith spent the summer as a Swenson Scholar researching the application of cubic curves to path planning in a Gantry Robot.

Megan Ameche did a programming internship at Sandia National Laboratory.

Evan Reed successfully passed his first actuary test this past summer.

REUs

What does REU stand for? It is Research Experiences for Undergraduates! Having Research experience highly increases your chances of getting into your desired grad schools as well as trying to get related jobs. Most programs accept students in the summers following your sophomore and junior years. Here is a link to find ones you may be interested in!

www.nsf.gov/home/crssprgm/reu/

Public Key Cryptography...Pretty Cool

In a CLU Math Department Seminar, Dr. King gave a preview of what her Math 482 Selected Topics: Cryptography course will be like next semester. She motivated the need for cryptography emphasizing the fact that the techniques used to protect personal data belongings and electronic transactions that are essential to our way of living belong to cryptography. Some historical ciphers, such as the monoalphabetic substitution ciphers and the polyalphabetic substitution ciphers, were examined and their security, or lack-of, was discussed. After going through examples of how to encrypt a message using a private key, Dr. King got to the main topic of her talk, public key cryptography. She specifically looked at RSA algorithm and went through an example illustrating the encryption and decryption process. These examples gave a glimpse into some of the interesting topics this course will cover next semester! If anyone is interested in learning more about the class contact Dr. King hking@callutheran.edu.

Departmental Assistance

We're here for you! If you have any questions concerning the Math Department or the Math Club please contact us.
Evan Reed
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Where are they now?

Lydia Cleveland is currently in the CLU Teaching Credential program - for secondary mathematics. It takes place off campus at Los Cerritos Middle School. Next semester, she will be placed in a high school in the area for full-time student teaching. If you're interested in learning more about the program she is in, e-mail her at lclevela@clunet.edu.

Sam Lyche is working as an endoscopy technician at Ventura Endoscopy Center and an administrative assistant for Island View Gastroenterology Associates in Ventura.

Jonathan Davis is doing IT work for the city of Thousand Oaks while applying for programming jobs.

Travis Wheaton completed a summer internship at Aerospace Corporation and has begun to get his teaching credentials.

Robbie Spangler is currently working as an actuary for Tower Watson, and has passed two actuary exams and is currently studying to take the third test.

Kendoku!!!

5	9x		15+			3÷		42x
17+		2-		2÷	10+	13+		
	60x	3+					1-	
		11+		9x		11+		90x
14+		6-			7	1-		
8x		3-		5-		2÷		
4-		10+		3-	17+	8+	8-	
	23+	3÷					15+	
			30x			7-		

www.kenken.com

Upcoming Events

<u>Math Club Events</u>	<u>Math Talks</u>	<u>Spring Math Conferences</u>
<ul style="list-style-type: none"> • Adopt a Family • If you have any ideas for Math Club T-shirts email Michael at mmrodri@clunet.edu 	<ul style="list-style-type: none"> • Friday, Nov. 18th in D-8 from 10am-11am Dr. Randall Paul will present, "Preferential Balloting: How Linear Algebra can solve some of its problems" 	<ul style="list-style-type: none"> • Saturday April 14th So Cal-Nev MAA meeting At Cal State Fullerton • Saturday March 11th Pacific Coast Math Conference At Cal Poly Pomona <u>Both of these conferences have student poster sessions</u>

Faculty Blurbs

Dr. Nathan Carlson

Over the summer, Dr. Carlson gave a presentation at the Prague Topological Symposium, which is one of the main conferences for point-set topology. He says it went very well and Prague was beautiful! He also did some trail maintenance in a national park in Nevada for a week with a volunteer group. He claimed "working with a hoe for a week may not sound exciting, but given that it was 10,000 ft with spectacular views, it was all worth it!" He is continuing research in point-set topology as well as working with invasive species modeling. He has mainly been looking at models for buffelgrass, which is an invasive desert grass. Outside of CLU, Dr. Carlson spends his time with his son Andrew, who is now two years old and asserting his strong opinions on matters such as toys, food, bedtime, etc...

Dr. Ralph Gomez

Over the summer, Dr. Gomez and his family traveled to central California and northern California to visit their family. In terms of research, Dr. Gomez just finished a paper regarding some properties that certain five dimensional manifolds can possess. He is also trying to learn more about a new branch of geometry called "generalized geometry". Lastly, as a "pedestrian" he is trying to understand some mathematical biology. Outside of mathematics, Dr. Gomez enjoys spending time with his family and, as he claims, "trying to" play the violin as well as "trying" to play the piano. He also stated that, given any three digit number, he can draw a cartoon character out of it! If you do not believe him, try it out and come by his office in the SBET building and bring him any 3-digit number.



