Message from the Chairperson

Due to the current weather conditions, this message from the chairperson will be on a delayed opening. This welcome will begin with the ten o’clock greeting... Just as I’ve always believed that February is shorter than the other months because we couldn’t take a full month of what February dishes out, I suppose it’s good that the semester doesn’t begin until part of January is out of the way. One nice feature of the “Spring” semester is that its very name is holding out hope that Spring will eventually arrive. “Spring Break” may not actually feel like Spring, but at least it provides a Break. Even those not so mathematically inclined remind us of the inescapable ubiquity of mathematics by counting the days until breaks, counting the weeks until the end of the semester or even graduation. The real world (or its surrogate, graduate school) awaits our seniors, summer jobs and internships and classes await others, as the need to focus on present studies vies for our attention with this concern for the future, leading to our own internal versions of March Madness. Enjoy the remainder of the semester: each day will be a little warmer, the birds will fly back to serenade us between classes, the theorems will make more and more sense, and the epsilons will continue their inevitable march toward zero.

Upcoming Event ~

Celebrate with us

**PI DAY**

Monday, March 14th, 2011 in SAC 305 Conference Room
11:30 a.m. to 1:30 p.m.

Please RSVP to Lorraine.mcgraw@villanova.edu by Thursday 3/10 if you plan to attend.

See the Villanova Math Group in Facebook for a link to the PiDay Challenge 2011.

Pi Day Challenge 2011 can be found online at
Math Club News

During the Fall meeting, students had a fun night of pumpkin carving.

The Math Club will be hosting a Career Night, Pi Day Party, and annual Faculty/Student Baseball Game! We are looking forward to a great semester!!

Math Club will be selling the new 2011 T-shirts at their next Math Club meeting! Check out the designs!!

Next Math Club meeting will be on Tuesday, March 15 at 5:30 p.m. in the MLRC

Math Learning Resource Center Information

Where: Old Falvey 2nd Floor (near the Writing Center)
Hours: Sunday 6:30-9:00pm, Monday—Thursday 1:00–5:00pm and 6:30–9:00pm
Phone: 610–519—MLRC
Voicemail: 610–519–5193
Web Address: www.villanova.edu/mlrc

Walk-in Tutorial Services ~ No appointment needed
Private Tutorial Service ~ 20 minute sessions ~ Call to set up appointment

Teacher: "What is seven Q plus three Q?"
Student: "Ten Q"
Teacher: "You're Welcome."

Question: "How many seconds are there in a year?"
Answer: "Twelve, January second, February second, March second, ..."
My Semester Abroad by Cara Doran, Junior Math Major

This past fall semester I studied abroad in Seville, Spain. Seville is the capital of the southern region of Spain, called Andalusia, and is the 4th largest city in Spain. As a math major it was hard to decide if I could study abroad and still be on the right track with my classes, but it’s a decision I’m very glad I made.

When I first arrived in Seville I was amazed at how quintessentially Spanish it really was. Every day I would walk past palm trees, people listening to flamenco music, and the third largest church in the world. My classes were even held in an old tobacco factory, the same factory that Carmen, of the famous novel and opera, worked at. Taking all my classes in Spanish was something I never thought I could do, but helped me learn so much. Here at Villanova I had only taken up to Intermediate II in Spanish. My two language classes helped me improve greatly, one in conversation and the other in writing. In my classes of Spanish Cinema and Latin American Literature I was able to use the language skills I was learning, while also getting a taste of Spanish culture.

One of the best parts of my experience was the fact that I lived with a Spanish woman in her apartment. My “Señora” as I called her, would cook me three meals a day, wash and iron all my clothes, and talk with me to help me improve my Spanish. It was with her that I learned the most about language and Spanish culture.

While I spent one semester away from Math, it was not a waste. Now I am almost finished with a Spanish minor and have completed two classes that I needed for the core requirements. I also experienced life in a new culture, and in the course of a semester became comfortable chatting with Spaniards, something I never thought I would be able to accomplish. Along the way I also was able to visit England, France, Portugal, Morocco, and other cities within Spain. Studying Abroad has been one of the greatest parts of my college experience thus far, and I would encourage all other students to consider it.

Undergraduate Opportunities ~

The Math Office keeps a binder of information received by them related to student internships, summer opportunities, REUs, and undergraduate conferences. Feel free to stop by any time to check it out. Also, Marie O’Brien sends emails to all undergraduate math majors whenever mailings come into the office.

Meet the Department of Math Sciences Staff:

St. Augustine Center Room 305
Department Phone: 610-519-4850
Department Fax: 610-519-6928
Email: math@villanova.edu

Staff:

Marie O’Brien
610-519-4809
Marie.obrien@villanova.edu

Lorraine McGraw
610-519-4850
Lorraine.mcgraw@villanova.edu
MAT 4310 Statistical Methods (Frey) TR 10:00am-11:15am

Description: Data displays and summarization, probability distribution, point and interval estimation, hypothesis testing, categorical data analysis, regression and correlation.

MAT 4600 Deterministic Operations Research (Pollack-Johnson) TR 11:30am-12:45pm

Description: Operations Research involves different kinds of discrete and continuous optimization problems. Examples of problem categories we will study include the Traveling Salesperson Problem (finding the shortest/cheapest way to visit a bunch of cities in a loop), the Critical Path Method (finding the shortest time a project can be completed in, and which activities are critical to finishing on time), the Assignment Problem (e.g., how to assign graders to professors to maximize compatibility of background to courses), the Diet Problem (what combination of food will meet your nutritional requirements at the lowest cost), Dynamic Programming (e.g., how to allocate study hours to courses for Finals to maximize average increase in GPA), the Shortest Path Problem (what’s the shortest way to get from one point to another, like Google Maps does for you), and the Production Problem (e.g., how many of different types of candles to produce for a fundraiser to maximize total profit). Categories of problems not mentioned above that we will study include Linear Programming, Integer Programming, Network Problems, Nonlinear Programming, Inventory Theory, and Game Theory. Students will do a project from their own lives that uses one of the techniques we will study in the course.

MAT 5500 Topology (Spriggs) TR 1:00pm-2:15pm

Description: Topological equivalence, connectedness, compactness, topology of subsets of Rn, manifolds, topological embeddings, topological spaces.

MAT 5920 Medical Imaging (Feeman) MWF 12:30pm-1:20pm

Description: This course focuses on the mathematics involved in computerized tomography – the creation and analysis of CAT scans. Topics include the Radon and Fourier transforms (both continuous and discrete), convolution, sampling, filters, and approximate solutions to systems of linear equations. All topics are presented and discussed in context. Possible additional topics include other scanning modalities, such as PET and SPECT, and magnetic resonance imaging (MRI). We will use computer algebra systems (Maple and/or Matlab) throughout. No prior experience with Maple or Matlab will be assumed. Prerequisites: MAT 2500 and MAT 2705. This course satisfies the "second analysis course" requirement.

MAT 5900 Seminar in Mathematics: "Mathematical Explorations" (Knecht) MWF 11:30am-12:30 pm

Description: This seminar is not like any math class you have taken at Villanova. The only prerequisite is the mathematical maturity that comes from taking 3300 or 3500. Instead of listening to an instructor lecture in class, you will work in groups on problems and present your findings to the class. You will learn how a mathematician takes a problem, makes conjectures based on experiments, and searches for underlying structure. Through this course you will develop useful skills, including writing and typesetting a math paper, giving oral presentations, and computing with a mathematics software system such as Maple. It should be fun, and everyone will grow as analytical thinkers.

Make an appointment with your advisor prior to your registration date/time. All advisors have their office hours posted at their office.