ΣSUM TIMES

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This is a special feature of the SUM Times, through which the students and faculty will be able to learn new and interesting facts the Mathematical Sciences Department Faculty. See if you can match the correct faculty member with each random fact.

1. Drives a Porsche 911 Carrera 4. ___
2. At the age of 6, almost fell to his death in the Alps. ___
3. Wore his hair in a ponytail for seven years.___
4. Spent a year of high school in Australia. ___
5. Is related to Teddy Roosevelt. ___
6. At age 13, played in a soccer tournament in Ireland. ___
7. Is a former semi-professional blackjack player.___
8. Can Juggle 4 balls while riding on a unicycle.* ___
9. Had a job picking up and dropping off sheets at a mortuary. ___
10. Is the queen of birthdays. ____
11. Is the perfect jeopardy contestant. ____
12. Taught his first math class when he was 18. ____
13. Drove a delivery truck for the family grocery business. ____
14. Competed in the Mr. Eastern America Body Building Contest in 1974. ____

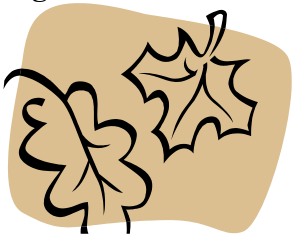
A. Dr. Paul Lupinacci
B. Dr. Douglas Norton
C. Dr. Marilyn Belkin
D. Dr. Andy Woldar
E. Dr. Matt DeVos
F. Marie O'Brien
G. Dr. Bruce Pollack-Johnson
H. Lorraine McGraw
I. Dr. John Santomas
J. Dr. Klaus Volpert
K. Dr. Charles Ashley
L. Dr. Robert Jantzen
M. Dr. Robert DeVos
N. Dr. Fritz Hartmann

How Do I Get My Pin Number?

Everything You Need to Know About Spring Registration

It's the week after fall break and you know what that means. That's right, its time to register for the spring semester! Many of you old dogs know the drill. However, for the freshmen and those of you that have forgotten, here is a recap of the registration process. This year the registration period starts Friday, October 29th. The seniors are the first to register. The juniors follow the seniors. The sophomores follow the juniors, and last but not least, the freshmen follow the sophomores. Sorry freshmen, but your day will come. You can't register for anything without your PIN number, and only your advisor has that. Prior to your registration date, you must set up an appointment with your advisor. At this appointment, you will discuss course options for the spring semester. Therefore, please attend the meeting with some level of preparation in terms of the courses that you want to take. After your advisor makes sure that your proposed schedule will keep you on target to graduate (this is fairly important), you will receive your PIN number. Once your scheduled registration time arrives (time is found in your NOVASIS account under registration), register for your classes on the web through NOVASIS. That's it! Any questions? Ask your advisor!

Table of Contents:



B.S. in Mathematics/M.S. in Applied Statistics Program

This program will allow a Villanova student to earn a bachelor's degree in Mathematics and a Master's degree in Applied Statistics in five years. Students in the Five-Year Program will benefit from exposure to concentrated statistics content, including graduate course work, within the time normally allotted to an undergraduate program. Students will be rewarded for their focus on statistics and on graduate course work by earning a BS in Mathematics and an MS in Applied Statistics in the equivalent of five years instead of six.

Students in the Five-Year BS/MS Program will complete all of the required work for a BS in Mathematics, including the core curriculum and all free electives. They will also complete all of the requirements for an MS in Applied Statistics. For the typical students, the accelerated timeframe for the two degrees depends upon three specific courses that are cross-listed as both undergraduate and graduate. Because of the relatively strong Mathematics and Statistics backgrounds of Villanova undergraduate Mathematics students, those students who choose to continue on to the MS in Applied Statistics program will not be required to retake these same basic courses at the graduate level.

Students may apply to be admitted to the Five-Year BS in Mathematics/MS in Applied Statistics Program after they have earned enough Villanova credits to achieve Junior status and after having completed MAT 4310 Statistics Methods or the graduate level version MAT 7404 Statistical Methods I. Students applying to the Five-Year BS/MS Program must have a cumulative overall grade point average (GPA) of 3.0 or higher and must also have a cumulative technical grade point average of 3.0 or higher.

For more information regarding the Five –Year BS in Mathematics/MS in Applied Statistics Program please contact Dr. Pigeon at joseph.pigeon@villanova.edu or 519-7347

Have You Been to the MLRC Lately?

The Mathematics Learning and Resource Center (MLRC) is a great place to go for a tutor, study, meet as a group, get access to mathematical computing resources, or kick back and relax! Is there anything that you can't do at the MLRC? I don't think so! Walk in tutorial service is available in the afternoon and evening sessions. The MLRC has a computer lab featuring 13 workstations, all equipped with Villanova mathematics course software, such as Maple, Minitab, SAS, and Excel. Don't forget to check out the Math Lounge for quiet study or relaxation!

MLRC and Math Lounge

Where: Old Falvey, 2nd Floor
(near the Writing Center)

Hours: Sunday 6:30 – 9:00 p.m.
Monday – Thursday 1:00 – 5:00 p.m.
and 6:30 – 9:00 p.m.

Phone: 519-MLRC
Voicemail: 519-5193
Web Address: www.villanova.edu/mlrc
For additional information contact:
Melissa Simone (610) 519-7823

Dates to Remember

October 29	Undergraduate registration begins
November 10	Last day for authorized WX
November 23	Thanksgiving recess begins after your last class
November 29	Classes resume
December 4	Putnam Exam
December 13	Final Day of Classes
December 14	Reading Day
December 15	Final Exams Begin
December 21	Last Day of Final Exams

Study Abroad

Interested in studying abroad? Stop by Villanova's Office of International Studies and meet with a member of the staff to learn more about different opportunities. The International Studies Office is located in Middleton Hall and is open from 9 AM to 5 PM, Monday through Friday. You can contact them by telephone at (610-519-6412). For more information visit the International Studies website at:
http://www.internationalstudies.villanova.edu/

Answers to Guess Who:
C, J, L, G, K, A, I, E, M, H, B, N, F, D

Courses for Spring 2005!

- **Math 4110** – *Combinatorics* (Dr. Paul Pasles)

Combinatorics is the study of enumeration (counting) and related topics. Combinatorial questions involve the arrangement of objects into patterns: when do these patterns exist, and in how many different ways can they be constructed? The answers to such questions have relevance in computer science, in biology, and on Celebrity Poker Showdown. This course covers permutations and combinations, counting methods, induction, the binomial and multinomial theorems, the inclusion-exclusion principle, and lots of other stuff. MAT 1505 (Calc II) is a prerequisite.

- **Math 4310** – *Statistical Methods* (Dr. Paul Lupinacci):

This course is an introduction to data summarization and various statistical methods that will allow the students to begin to build up a toolbox of statistical techniques for handling data analysis. The class will study probability distributions that will serve as the foundations for these methods. The statistical methods that the class will study include point estimates, interval estimates and hypothesis tests for population means, variances and proportions, categorical data analysis, regression and correlation.

- **Math 5400** – *Complex Analysis* (Dr. Frederick Hartmann)

Why "Get Real" when you can get complex? The results of algebra, calculus and geometry are all the more beautiful when viewed through a complex lens. In this course we'll study functions of a complex variable. We will cover Cauchy's theorem, power series, Laurent series, and much more. Math majors are required to take a second analysis course, so if you missed Advanced Calc II last year, sign up for complex! The official prerequisites for this course are MAT 2500 (Calc III) and 2600 (Foundations).

- **Math 5705** – *Math Statistics II* (Dr. Michael Levitan)

This course is the continuation of Math 5700 (*Math Statistics I*). The major topics to be covered include survey sampling, parameter estimation, hypothesis testing, two-sample tests, analysis of variance, analysis of categorical data, and linear least squares. The official prerequisite is MAT 5700.

- **Math 5900** – *Senior Seminar: Research Experience* (Dr. Timothy Feeman and Dr. Osvaldo Marrero)

Our goal in this seminar is to guide each student through the many steps of the mathematical research process, from reading something that catches one's interest, to formulating questions of one's own, and ultimately presenting one's ideas in writing.

- **Math 5920** – *Computational Molecular Biology* (Dr. Wil Baker and Dr. Bob Beck)

Computational Molecular Biology is a writing enriched interdisciplinary honors course open to sophomores, juniors and seniors majoring in the sciences. There are no specific prerequisites; however, an interest in the subject and a willingness to work with others in solving open-ended problems are essential. The objectives are for students to learn to identify and recognize problems of molecular biological significance amenable to computational or mathematical modeling or solution; investigate or design algorithms for solving these problems, evaluating their efficiency and complexity; and develop communication techniques for working with investigators with backgrounds in other disciplines. A problem based learning approach will be employed in which teams, formed from students from different majors, will address problems posed by the instructors. Topics to be considered include restriction mapping, permutations of genes, sequence alignment, gene prediction, gene translation and site identifications. During class, instructors will present the problems and background information, and teams will report on progress and interact with other teams.

- **Math 5930-001**– *Coding Theory* (Dr. Andrew Woldar)

The first error-correcting code was developed in 1947 by R.Hamming. At the time it prevented the existing Model V computer at Bell Labs from shutting down every few hours, which by today's standards would mean several 1000 times per second. In other words, without error-correcting codes the modern computers of today simply could not run. In my course, we will study error-correcting codes from both an historic and mathematical perspective. A familiarity with abstract algebra, although helpful, is not absolutely necessary. (For example, the course will include a self-contained treatment of finite fields and principal ideal domains.) For the course text I have chosen: Introduction to the Theory of Error-Correcting Codes, by Vera Pless. Topics covered will include: linear codes, Hamming codes, error-detecting and error-correcting, generator and parity check matrices, dual codes, syndrome decoding, perfect codes, sphere-packing bounds, Galois theory of finite fields, cyclic codes.

- **Math 5930-002** – *Paradoxes and Infinity* (Dr. Roy Cook, Philosophy)

Most, if not all, of the main philosophical problems plaguing philosophers over the past two millennia can be traced to one or another paradox. In the first section (of two) of the course we shall examine the notion of the infinite, concentrating on paradoxes such as Zeno's, Cantor's, Russell's and Galileo's. In addition to examining the history of infinity, we shall focus on the mathematics of infinite, and the examination of the infinite as it appears in literature. The second section of the course is devoted to the Liar Paradox ("This sentence is false") and the Sorites Paradox, neither of which are connected to infinite. We shall conclude the course with a brief look at how one should respond to paradoxes such as the ones we have studied, considering the idea that perhaps no massive revision of our basic beliefs is necessitated by the appearance of a paradox, other than accepting that sometimes contradictions can be true.