Department of Mathematics

UNDERGRADUATE MATH SEMINAR

This week's math seminar is part of an annual Distinguished Lecture Series in Interdisciplinary Mathematics, Computer Science and Engineering, supported by an NSF LEAPS-MPS grant. It is co-sponsored by Union's Department of Mathematics and the Templeton Institute. Note the special time and location!

DATE: **THURSDAY, May 15**

Time & 4:45pm - Refreshments in Hale House

Location: 5:30pm - Seminar in O'Brien 117

This seminar, **Professor Moon Duchin** from the math department at **Cornell University** and the leader of Cornell's MGGG Redistricting Lab/Data and Democracy Lab in Cornell's Brooks School of Public Policy will present the following talk:

Title: Designing Democracy

Abstract: Systems of election are powerful tools for gauging people's preferences and fusing them into an outcome, including how to hire, whether to take collective action, how to spend a budget, or how to get political representation. The choice of election system faces tradeoffs when it comes to different desirable properties. In the context of rapid transformation in global democracy, I'll discuss "math for democracy" -- the design and tuning of our systems of election for fairness and healthy representative democracy.

AWM meeting with Professor Moon Duchin

Come join the AWM for a casual conversation with Professor Moon Duchin (Cornell University) from 2:45-3:30 on Thursday, May 15 in Bailey 204! Light refreshments will be provided.

Some Scenes from Steinmetz Day

At the Steinmetz Symposium on Friday, May 9, there were several math talks and posters presented. Here are some photos from the wonderful day.





Grace Newcombe's talk combined Atharv Tekurkar and Baibhav Barwal math and music, letting the audience compared Machine Learning Models to listen to the Fourier series of elliptic see how well they could predict bank failures.



and Professor Phanuel Mariano proved concerning bounds on the Lyapunov exponent in a certain model.

TURN THE PAGE – THE NEWSLETTER CONTINUES with more from Steinmetz and information about fall term preregistration.



Fall Term Preregistration: Advising, Pre-Approval Underway

Even though we are just halfway through the spring term, it is already time to start thinking about fall term course scheduling, advising meetings, and "Pre-Approval".

The timeline for advising, Pre-Approval, and fall term registration is as follows:

- Weeks 6, 7, and 8 students meet with their Academic Advisor and obtain registration clearance.
- **May 14 at 5:00pm**: <u>Pre-Approval surveys</u> are due. For Fall 2025, three math courses require pre-approval: **MTH 105, 110, 113**. Complete <u>this form</u> to seek preapproval for math courses.
- May 27: Regular registration period begins.

<u>Courses beyond calculus</u>: This fall, the Math Department will be offering several interesting courses beyond the calculus sequences that are suitable for math majors and minors.

- Math 199 is the department's "bridge course," intended to help students make the transition from computationally oriented courses to more theoretical proof-writing courses. This is a **required** course for all math majors and minors that is *usually* taken after Math 115. This course carries WAC-R credit. *MTH-199-01: MWF 1:50-2:55*.
- Math 219 Discrete Mathematics. In this course, topics studied may include graph theory, partially ordered sets, the Four-Color Theorem, and more. As a 200-level course, Math 219 is appropriate for students coming from Math 199, as well as more advanced students. *MTH-219-01: TuTh 10:55-12:40.*
- Math 227 Financial Mathematics. We will apply mathematical concepts to calculating present and accumulated values for various streams of cash flows. We will learn the terminology associated with these calculations including simple and compound interest, discount, and force of interest. We will examine various financial instruments including annuities, loans, bonds, stocks and interest rate swaps, and how these instruments can be used to solve various needs. The focus of the class is on being able to solve problems and perform relevant calculations. Prerequisites: ECO 101 and (MTH 112 or MTH 113). *MTH-227-01: MWF 3:05-4:45*.
- Math 234 Differential Equations. A first course in differential equations that takes a somewhat more theoretical approach than its 100-level counterpart, Math 130. Students may only take one of these two courses. This course carries GDQR credit. *MTH-234-01: MWF 1:50-2:55.*
- Math 336 Real Variable Theory is a core course that is required for math majors. In this course, you will learn some of the theoretical underpinnings of the calculus of functions whose domain lies within the set of *real* numbers. *MTH*-336-01: *MWF* 9:15-10:20.

More from Steinmetz



IN THE SHADOWS OF SAMARKAND: PERSIA'S LOST MATHEMATICIANS

The opening slide of Ziayan Omer's presentation at the Templeton Institute's Special Session



Janak Subedi before his talk comparing how well three different machine learning models performed in studying credit card defaults, real estate pricing, and vehicle resale values.

ReUnion Weekend, Friday, May 16, 4:00 – 5:00pm Math Department Reception: Bailey 204 (Math Common Room) Enjoy a casual reception and light refreshments with alumni who majored in math.