

## UNDERGRADUATE MATH SEMINAR

The next seminar is a special joint seminar, co-sponsored by the **Union College Department of History**. Note that this seminar will not be at its usual time and day, but instead, it is ...

**DATE:** **TUESDAY, October 9**

**Time &** **4:15pm** – Refreshments in **Bailey 204**

**Location:** **4:45pm** – Seminar in **Bailey 207**



Professor Dr. Volker Remmert  
University Professor of Science  
and Technology History  
Bergische Universitaet Wuppertal

In this seminar, **Professor Dr. Volker Remmert**, a professor of Science and Technology History at the Bergische Universitaet Wuppertal, will deliver the following talk:

**Title: Forms of Remigration - Émigré Jewish Mathematicians and Germany in the Immediate Post-War Period**

**Abstract:** Over the last twenty years or so there has been a steady flow of historical studies on remigration into Germany in the immediate post-war period. These studies have described three main forms of academic remigration to Germany after World War II:

- 1) returning to universities in Germany on a permanent basis as university professors;
- 2) returning as visiting professors, assessing Germany without any obligation to stay;
- 3) returning for guest lectures and academic visits.

In this context my interest is in Jewish émigré mathematicians and their stance to Germany in the immediate post-war period.

## Problem of the Newsletter – October 8, 2018

**Last week's problem:** A solution to last week's problem has been posted at the newsletter sites in Bailey.

**This week's problem:** Suggested by Union Math Professor Emeritus Karl Zimmermann. (The original source of this problem will be revealed later ... no googling!)

Consider the following game for two players, where one player is called the Blind Bartender and the other the Antagonist. There is a square tray with four glasses, one standing in each corner of the tray. A glass can be either up (upright) or down (upside down). The Bartender is facing an edge of the tray. Thus, the four glasses occupy four positions: left-front, left-back, right-front, and right-back. Since the Bartender is blind, he cannot see the glasses, but *his goal is to turn the glasses so that they will all be up or will all be down*. A round in the game goes like this: The Bartender announces one or two of the four positions. After this declaration, the Antagonist is allowed to rotate the tray through a multiple of 90 degrees. By such a rotation, the glasses occupying the four positions have been permuted. Now the Bartender is allowed to touch the glasses occupying the positions he declared. He touches them and decides how he wishes to turn them. He may leave the glasses as they are, he may turn one of them, or he may turn both of them. If, after his decision, all four glasses are up, or all four glasses are down, then the Bartender has won. If not, the game continues with another round.

The problem: design a strategy, an algorithm, so the Bartender will win (that is, all glasses will have the same orientation, either up or down) in a finite number of turns. Is this possible?

**Professor Friedman** ([friedmap@union.edu](mailto:friedmap@union.edu)) will accept solutions until midnight on Friday, October 12.

## Winter Term Preregistration Process Begins this Weekend: Remember to Petition

The petitioning process for winter term classes begins this weekend, Saturday, October 13, and runs through Tuesday, October 16. If you are interested in taking any petition courses, make sure to submit a petition through WebAdvisor during this period. After faculty have reviewed the petitions, students then need to accept or decline the petitions that they were offered; this is to be done between Tuesday, October 23 and Thursday, October 25.

### The Petition Math Courses

- IMP 120
- Math 110
- Math 113
- Math 117
- Math/Stats 128
- Math 130
- Math 197
- Math 199
- Math 235
- Math 340
- Stats 104

**REMEMBER TO MEET WITH YOUR ADVISOR, WHO MUST  
RELEASE A "HOLD" IN WEB-ADVISING BEFORE YOU  
WILL BE ABLE TO PREREGISTER AT YOUR SCHEDULED  
TIME DURING WEEK 9.**

**The Courses:** This winter, the Math Department is offering several interesting courses beyond the calculus sequence that are suitable for math majors and minors.

**Math/Stats 128** is a calculus-based introduction to probability. Students who might be interested in a career as an actuary or in financial mathematics should consider this course. This course is also helpful for economics majors, statistics minors, and prospective teachers.

**Math 130** is a course in Ordinary Differential Equations. This course is a more computational version of Math 234, which is also being offered this term. Note that students may only take one of these two courses.

**Math 197** (Discrete Mathematics for Computer Science) introduces students to the basics of proof-writing for math and computer science, as well as elementary logic, functions, relations, sets, and basic combinatorics. This course is *intended for computer science students*; students considering a math major or minor should take Math 199, not Math 197.

**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. It is a **required** course for all math majors and minors that is *usually taken after* a student has taken Math 115.

**Beyond Math 199:** There are three courses being offered in the winter that have a Math 199 prerequisite:

- **Math 234** (Differential Equations). This course takes a somewhat more theoretical approach to the study of differential equations than its 100-level counterpart, Math 130. Note that students may only take one of these two courses.
- **Math 235** (Number Theory). In this course, properties of the integers are studied, from divisibility and modular arithmetic through Gauss' crowning achievement of Quadratic Reciprocity. MTH-235 normally is closed to students who have passed MTH-221 or MTH-054.
- **Math 340** (Linear Algebra). This is a foundational course in math that is **required** for math majors. The primary objects of study in this course are vector spaces and the linear maps between them.
- **Math 432** (Abstract Algebra 2). This course is a continuation of Math 332. Certain topics in algebra will be chosen by the instructor for a more intensive study. This a great course for students pursuing honors in the major, and also for students considering graduate study in math.

**Statistics 264** (Regression Analysis). In this course, both the theory and application of regression analysis to develop regression models to fit real-world data sets are studied. Prerequisite(s): MTH 115 and STA 104; ECO 243, STA 164, PSY 200, ECO 243, MER 301 or permission from Chair.

**The next Math Club meeting is Wednesday, October 10 in Bailey 204, at 1:00pm.**